

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUINSTREET, INC.,

Plaintiff,

v.

C.A. No. 06- 495 (SLR)

PARALLEL NETWORKS, LLC,

Defendant.

**MOTION FOR LEAVE TO FILE THIRD-PARTY COMPLAINT
AGAINST MICROSOFT CORPORATION**

Plaintiff and now Third-Party Plaintiff QuinStreet, Inc., (“QuinStreet”) hereby moves the Court pursuant to Fed. R. Civ. P. 14(b) for leave to file the attached third-party complaint against Microsoft Corporation (the “Motion”).

1. On August 8, 2006, QuinStreet filed a declaratory judgment action in the District Court for the District of Delaware against epicRealm claiming that, as a service provider that employs a plurality of systems for dynamic web page generation including the Microsoft IIS server and in light of the claims asserted in the Texas lawsuit,¹ it has a reasonable apprehension that epicRealm will accuse QuinStreet of infringement for using those technologies.

2. On April 13, 2007, epicRealm Licensing, LP., filed an answer and counterclaim alleging that QuinStreet’s use of systems and methods for managing dynamic web page generation requests infringed one or more claims of the epicRealm’s patents-in-suit.

¹ *EpicRealm Licensing LLC v. Franklin Covey et al.* 2-05CV-356 U.S. District Court for the Eastern District of Texas, Judge Folsom filed August 5, 2005 asserting U.S. Patent Nos. 5,894,554 and 6,415,335 which are the same patents asserted by epicRealm in its counterclaim in the present action.

3. epicRealm has consistently contended in the Texas lawsuit that Microsoft's IIS software can be configured in ways that infringe its patents. epicRealm has taken that same position in this case and has refused to state that its counterclaim of infringement asserted herein does not apply to the Microsoft IIS platforms used by QuinStreet. As a result, QuinStreet is defending against epicRealm's claim that QuinStreet's use of Microsoft IIS web server technology in managing dynamic web page generation requests may infringe the epicRealm patents.

4. QuinStreet licensed Microsoft IIS software for use in its computer systems for the purpose, among others, of managing and responding to dynamic web page generation requests.

5. QuinStreet and Microsoft entered into Microsoft Business Agreement No. U3475507 effective June 12, 2003 in which Microsoft represents and warrants with respect to any Microsoft software licensed for the licensee's use that it will defend the licensee against any of the following claims made by an unaffiliated third party, and will pay the amount of any resulting adverse final judgment (or settlement to which it consents). Attached as Exhibit 1.

6. QuinStreet has notified Microsoft of the epicRealm claim and has requested that Microsoft undertake its defense and provide indemnification, but thus far Microsoft has failed to do so.

7. This motion for leave to file a third-party complaint against Microsoft Corporation is timely and is filed within the time limits to file all motions to join other parties and amend pleadings set forth in the Joint Discovery Plan and Scheduling Order.

WHEREFORE, QuinStreet respectfully requests that the motion be granted and that QuinStreet's Third-Party Complaint Against Microsoft Corporation, attached as Exhibit 2, be deemed filed on the date that the Motion is granted.

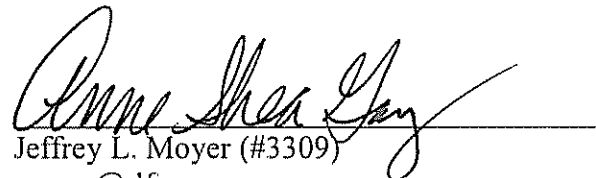
OF COUNSEL:

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222 North LaSalle Street
Suite 2500
Chicago, Illinois 60601
312.609.7500

and

Gordon C. Atkinson
Cooley Godward LLP
101 California Street, 5th Flr.
San Francisco, California 94111
415.693.2000

Dated: January 4, 2008

A handwritten signature in black ink, appearing to read "Jeffrey L. Moyer", is written over a horizontal line.

Jeffrey L. Moyer (#3309)
moyer@rlf.com

Anne Shea Gaza (#4093)
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Richards, Layton & Finger
One Rodney Square
920 N. King Street
Wilmington, Delaware 19899-0551
302-651-7700

Attorneys for Plaintiff QUIN STREET, INC.

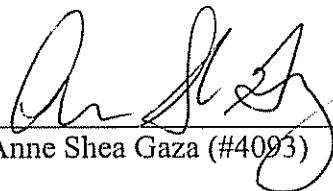
CERTIFICATE OF SERVICE

I hereby certify that on January 4, 2008, I caused to be served by hand delivery the foregoing document and electronically filed the same with the Clerk of Court using CM/ECF which will send notification of such filing(s) to the following:

Richard L. Horwitz
David E. Moore
Potter Anderson & Corroon LLP
1313 N. Market Street, Hercules Plaza, 6th Floor
P.O. Box 951
Wilmington, DE 19899

I hereby certify that on January 4, 2008, I sent by Federal Express the foregoing document to the following non-registered participants:

Harry J. Roper
Jenner & Block
330 N. Wabash Avenue
Chicago, IL 60611-7603


Anne Shea Gaza (#4093)

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Defendant.

C. A. No. 06-495-SLR

RULE 7.1.1 CERTIFICATION

Pursuant to Local Rule 7.1.1, the parties have conferred regarding Quinstreet's Motion for Leave to File a Third Party Complaint and epicRealm appears to oppose the relief sought in the Motion.

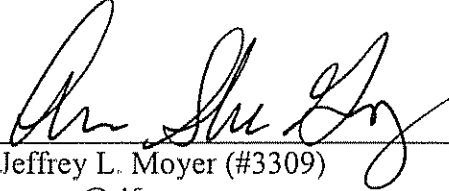
OF COUNSEL:

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Chicago, Illinois 60601
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920 N. King Street
Wilmington, Delaware 19899-0551
302-651-7700

Attorneys for Plaintiff QUINSTREET, INC.

EXHIBIT 1

1-70TW2P

1-70TW2S

Volume Licensing Customer,

Welcome to the Microsoft Volume Licensing Program. Enclosed is your copy of your new Volume Licensing Agreement with Microsoft, which is now in effect with your company.

By now you should have received an email notification from Microsoft regarding acceptance of the terms and conditions of your Volume Licensing Agreement. The email notification contains current contract information such as licensing pools, participant contact information, and more.

In addition to the electronic email acceptance letter, you should have received a second email from Microsoft with information regarding an online resource for Microsoft Volume Licensing customers. This Web resource, called Microsoft Volume Licensing Services (MVLS), contains detailed and confidential information regarding your Microsoft Volume Licensing account, including transaction history, product downloads, and Volume Licensing Product Keys

If you have not received your electronic acceptance notification or MVLS instructions, please contact your Large Account Reseller or Enterprise Software Advisor for assistance.

Keep this contract in a secure location. It is important that you understand all of the terms and conditions contained within, and can access the information if questions arise.

Thank you,

Microsoft Licensing, GP



Microsoft Business **Agreement**

Microsoft Business Agreement
Number
Microsoft affiliate to complete

U3475507

This Microsoft Business Agreement is entered into between the following entities as of the effective date identified below. Each party will notify the other in writing if any of the information in the following table changes.

Customer			
Name of Entity		Contact Name (This person handles access to online information and receives notices under this agreement unless a different contact is provided below)	
QUINSTREET, INC.		Jeff Daugherty	
Street Address		Contact Email Address (required for online access)	
301 CONSTITUTION DRIVE MENLO PARK, CA 94025		jdaugherty@quinstreet.com	
City	State/Province	Phone	
		650. 475. 7733	
Country	Postal Code	Fax	
		650. 289. 0854	
Microsoft Account Manager Name		Microsoft Account Manager Email Address	
Contracting Microsoft Affiliate			
MSLI, GP - 6100 Neil Road, Suite 210 - Reno, Nevada USA 89511-1137 - Dept. 551, Volume Licensing			

If online access and notices should be provided to someone or some place other than above, complete this section:			
Name of Entity		Contact Name	
Street Address		Contact Email Address (required for online access)	
City	State/Province	Phone	
Country	Postal Code	Fax	

If duplicate electronic contractual notices should be provided to someone or some place in addition to the above, complete this section:

Name of Entity		Contact Name
Street address		Contact Email Address (required for electronic notice)
City	State/Province	Phone
Country	Postal Code	Fax

This agreement contains terms of the relationship between you (the entity signing the agreement and its affiliates) and us (the Microsoft affiliate signing below and its affiliates). If you license software or contract for services from us under this agreement, the specific terms of those transactions will be contained in separate license or services agreements that will incorporate the terms of this agreement, as amended by those license or services agreements. Nothing in this agreement obligates either party to enter into any license or services agreements.

Effective date. If the first license agreement entered into under this agreement is given an effective date that is earlier than the date this agreement is signed by us, the effective date of this agreement will be that earlier date. Otherwise, this agreement will be effective on the date it is signed by us.

Notices to Microsoft should be sent to:	Copies should be sent to:
MSLI, GP 6100 Neil Road, Suite 210 Reno, Nevada USA 89511-1137 Dept. 551, Volume Licensing	Microsoft Law and Corporate Affairs One Microsoft Way Redmond, WA 98052 USA Volume Licensing Group (425) 936-7329 fax

By signing below, you acknowledge that you have read and understood the terms of this agreement, agree to be bound by these terms, and represent and warrant that the information you provide on this cover page is accurate.

Customer	Contracting Microsoft Affiliate
Name <i>Quinstreet, Inc.</i>	MSLI, GP
Signature <i>[Signature]</i>	Signature <i>[Signature]</i>
Printed Name <i>Jeff Daugherty</i>	Printed Name <i>Debbie LuVisi</i>
Printed Title <i>NT System Administrator</i>	Printed Title <i>Contract Administrator</i>
Signature Date <i>5/29/03</i>	Signature Date (date Microsoft affiliate countersigns) <i>JUN 13 2003</i>
	Effective Date (may be different than signature date) <i>JUN 12 2003</i>

Terms and Conditions

1. Definitions. In this agreement, "you" means the entity that has entered into this agreement (or a license or services agreement under this agreement) and its affiliates, and "we" or "us" means the Microsoft affiliate that has entered into this agreement (or any license or services agreement under this agreement) and its affiliates. In addition, the following definitions apply:

"affiliate" means (i) with regard to you, any legal entity that you own, which owns you, or which is under common ownership with you, and (ii) with regard to us, any legal entity that we own, which owns us, or which is under common ownership with us;

"available" means, with respect to a product, that we have made licenses for that product available for ordering under a particular licensing program;

"commercial product" means any product we make available for license for a fee;

"fixes" means commercial product service packs and other fixes that we release generally;

"free product" means any product we make available for license without charge;

"ownership" means, for purposes of the definition of "affiliate" above, more than 50% ownership;

"pre-release" or "beta" products are products provided prior to commercial release;

"product" means all commercial, free, pre-release and beta products;

"Product List" means, with respect to any licensing program, the statement published by Microsoft from time to time on the World Wide Web at <http://microsoft.com/licensing/>, or at a successor site that we identify, which identifies the products that are or may be made available under the program (which availability may vary by region) and any product-specific conditions or limitations on the acquisition of licenses for those products;

"run" or "use" means to copy, install, use, access, display, run or otherwise interact with;

"service deliverables" means computer code and related materials, other than fixes, we provide to you when performing services

2. Use and ownership. Unless otherwise specified in a license agreement, use of any product that you license from us is governed by product use rights specific to each product and version and by the terms of the license agreement under which you licensed the product. We will provide you with a copy of the applicable product use rights, or will make them available to you either by publication on the World Wide Web, at <http://microsoft.com/licensing/> or at a successor site that we identify, or by some other reasonable means. You acknowledge that you have access to the World Wide Web. We do not transfer any ownership rights in any licensed product and we reserve all rights not expressly granted

Use of any fixes is defined by the product use rights for the affected product or, if the fix is not provided for a specific product, any other use terms we provide. All fixes are licensed to you. Use and ownership of service deliverables will be as set forth in the applicable services agreement and related documents.

3. **Restrictions on use.** You may not:

- 7 Separate the components of a product made up of multiple components by running them on different computers, by upgrading or downgrading them at different times, or by transferring them separately, except as otherwise provided in the product use rights;
- 7 Rent, lease, lend or host products or service deliverables, except where we agree by separate agreement;
- 7 Reverse engineer, de-compile or disassemble products, fixes or service deliverables, except to the extent expressly permitted by applicable law despite this limitation;
- 7 Transfer licenses to, or sublicense, products, fixes or service deliverables to the U S Government

Products licensed under this agreement (including any license or services agreement incorporating these terms) are subject to U.S. export jurisdiction. You agree to comply with all applicable international and national laws that apply to these products, including the U.S. Export Administration Regulations, as well as end-user, end-use and destination restrictions issued by U.S. and other governments. For additional information, see <http://www.microsoft.com/exporting/>

4. **Confidentiality.**

- a. **Confidential information.** Confidential information means information marked or otherwise identified in writing by a party as proprietary or confidential or that, under the circumstances surrounding the disclosure, ought in good faith to be treated as proprietary or confidential. It includes non-public information regarding either party's products, features, marketing and promotions, and the negotiated terms of our agreements. All beta products are confidential unless excepted below

Confidential information does not include information which: (i) the recipient developed independently; (ii) the recipient knew before receiving it under the relevant agreement; or (iii) is or subsequently becomes publicly available or is received from another source, in both cases other than by a breach of an obligation of confidentiality

- b. **Use of confidential information.** For a period of five years after initial disclosure, neither party will use the other's confidential information without the other's written consent except in furtherance of this business relationship or as expressly permitted by this section 4, or disclose the other's confidential information except (i) to obtain advice from legal or financial consultants, or (ii) if compelled by law, in which case the party compelled to make the disclosure will use its best efforts to give the other party notice of the requirement so that the disclosure can be contested.

You and we will take reasonable precautions to safeguard each other's confidential information. Such precautions will be at least as great as those we each take to protect our own confidential information. You and we will disclose each other's confidential information to our employees or consultants only on a need-to-know basis and subject to the confidentiality obligations imposed here. When confidential information is no longer necessary to perform any obligation under any of the agreements, each of us will return it to the other or destroy it at the other's request.

- c. **Retained rights.** You and we are free to develop products independently without the use of the other's confidential information. Neither you nor we are obligated to restrict the future work assignments of people who have had access to confidential information. In addition, you, we and these people are free to use the information that these people remember related to information technology, including ideas, concepts, know-how or techniques, so long as confidential information of the other party is not disclosed in violation of this agreement in the course of such use. This use shall not grant either party any rights under the other's copyrights or patents and does not require payment of royalties or separate license.

We or you may provide suggestions, comments or other feedback to the other with respect to the other's confidential information. We or you will not give feedback that is subject to license terms that seek to require of the party receiving the feedback that any product, technology, service or documentation incorporating or derived from such feedback, or any intellectual property, must be licensed or otherwise shared with any third party. Feedback is voluntary and the party receiving feedback is not required to hold it in confidence. The party receiving feedback will not disclose the source of feedback without the consent of the party providing it. Feedback may be used for any purpose without obligation of any kind.

- d. **Cooperation in the event of disclosure.** Each of us will immediately notify the other upon discovery of any unauthorized use or disclosure of confidential information and will cooperate in any reasonable way to help the other regain possession of the confidential information and prevent further unauthorized use or disclosure

5. **Warranties.**

- a. **Limited product warranty.** We warrant that each version of a commercial product will perform substantially in accordance with our user documentation. This warranty is valid for a period of one year from the date you first run a copy of the version. To the maximum extent permitted by law, any warranties imposed by law concerning the products are limited to the same extent and the same one-year period. This warranty does not apply to components of products which you are permitted to redistribute under applicable product use rights, or if failure of the product has resulted from accident, abuse or misapplication. If you notify us within the warranty period that a product does not meet this warranty, then we will, at our option, either (i) return the price paid for the product or (ii) repair or replace the product. To the maximum extent permitted by law, this is your exclusive remedy for any failure of any commercial product to function as described in this sub-section
- b. **Free and beta products.** To the maximum extent permitted by law, free and beta products are provided "as-is," without any warranties. You acknowledge that the provisions of this paragraph with regard to pre-release and beta products are reasonable having regard to, among other things, the fact that they are provided prior to commercial release so as to give you the opportunity (earlier than you would otherwise have) to assess their suitability for your business, and without full and complete testing by us
- c. **Services.** We warrant that all services will be performed in a good workmanlike manner.
- d. **NO OTHER WARRANTIES.** TO THE EXTENT PERMITTED BY APPLICABLE LAW, WE DISCLAIM AND EXCLUDE ALL REPRESENTATIONS, WARRANTIES AND CONDITIONS, WHETHER EXPRESS, IMPLIED OR STATUTORY, OTHER THAN THOSE IDENTIFIED EXPRESSLY IN THIS AGREEMENT (INCLUDING ANY LICENSE OR SERVICES AGREEMENT THAT INCORPORATES THESE TERMS), INCLUDING BUT NOT LIMITED TO WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, SATISFACTORY QUALITY, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCTS, SERVICE DELIVERABLES, RELATED MATERIALS AND SERVICES. WE WILL NOT BE LIABLE FOR ANY SERVICES OR PRODUCTS PROVIDED BY THIRD PARTY VENDORS, DEVELOPERS OR CONSULTANTS IDENTIFIED OR REFERRED TO YOU BY US UNLESS SUCH THIRD PARTY PRODUCTS OR SERVICES ARE PROVIDED UNDER WRITTEN AGREEMENT BETWEEN YOU AND US. AND THEN ONLY TO THE EXTENT EXPRESSLY PROVIDED IN SUCH AGREEMENT.

6. **Defense of infringement and misappropriation claims.** We will defend you against any of the following claims made by an unaffiliated third party, and will pay the amount of any resulting adverse final judgment (or settlement to which we consent):

- a. claims that any commercial product or fix infringes its patent, copyright or trademark or misappropriates its trade secret, or
- b. claims that any service deliverable infringes its copyright or trademark, or misappropriates its trade secret

You must notify us promptly in writing of the claim and give us sole control over its defense or settlement. You agree to provide us with reasonable assistance in defending the claim, and we will reimburse you for reasonable out of pocket expenses that you incur in providing that assistance. The terms "misappropriation" and "trade secret" are used as defined in the Uniform Trade Secrets Act, except in the case of claims arising under any license or service agreement governed by the laws of any jurisdiction outside the United States, in which "misappropriation" will mean intentionally unlawful use and "trade secret" will mean "undisclosed information" as specified in Article 39.2 of the TRIPs agreement

Our obligations will not apply to the extent that the claim or adverse final judgment is based on (i) specifications you provide to us for the service deliverables; (ii) code or materials provided by you as part of service deliverables; (iii) your running of the product, fix or service deliverables after we notify you to discontinue running due to such a claim; (iv) your combining the product, fix or service deliverables with a non-Microsoft product, data or business process; (v) damages attributable to the value of the use of a non-Microsoft product, data or business process; (vi) your altering the product, fix or service deliverables; (vii) your distribution of the product, fix or services deliverable to, or its use for the benefit of, any third party; (viii) your use of our trademark(s) without express written consent to do so; or (ix) for any trade secret claim, your acquiring a trade secret (a) through improper means; (b) under circumstances giving rise to a duty to maintain its secrecy or limit its use; or (c) from a person (other than us or our affiliates) who owed to the party asserting the claim a duty to maintain the secrecy or limit the use of the trade secret. You will reimburse us for any costs or damages that result from these actions.

If we receive information concerning an infringement claim related to a commercial product, fix or service deliverable, we may, at our expense and without obligation to do so, either (i) procure for you the right to continue to run the allegedly infringing product, fix or service deliverable, or (ii) modify the product, fix or service deliverable or replace it with a functional equivalent, to make it non-infringing, in which case you will stop running the allegedly infringing product, fix or service deliverable immediately. If, as a result of an infringement claim, your use of a commercial product, fix or service deliverable is enjoined by a court of competent jurisdiction, we will, at our option, either procure the right to continue its use, replace it with a functional equivalent, modify it to make it non-infringing, or refund the amount paid and terminate the license for and, as applicable to certain service deliverables, your ownership rights in, the infringing product, fix or service deliverable.

If any other type of third party claim is brought against you regarding our intellectual property, you must notify us promptly in writing. We may, at our option, choose to treat these claims as being covered by this section. This Section 6 provides your exclusive remedy for third party infringement and trade secret misappropriation claims.

7. Limitation of liability.

- a. Limitation.** There may be situations in which you have a right to claim damages or payment from us. Except as otherwise specifically provided in this paragraph, whatever the legal basis for your claims, our liability will be limited, to the maximum extent permitted by applicable law, to direct damages up to the amount you have paid for the product or services giving rise to the claims. In the case of free product, services provided to you free of charge, or code you are authorized to redistribute to third parties without separate payment to Microsoft, our total liability to you will not exceed US\$5000, or its equivalent in local currency. The limitations contained in this paragraph will not apply with respect to the following in connection with the performance of this agreement (or any license or services agreement incorporating these terms):

(i) our obligations under Section 6 to defend third party claims of patent, copyright or trademark infringement or trade secret misappropriation, and to pay damages resulting from any final adjudication (or settlement to which we consent) of such claims;

(ii) our liability for damages for gross negligence or willful misconduct, to the extent caused by us or our agent and awarded by a court of final adjudication; and

(iii) our obligations under Section 4 (confidentiality)

- b. NO LIABILITY FOR CERTAIN DAMAGES.** TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEITHER PARTY NOR ANY OF ITS AFFILIATES OR SUPPLIERS WILL BE LIABLE FOR ANY INDIRECT DAMAGES (INCLUDING, WITHOUT LIMITATION, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES, DAMAGES FOR LOSS OF PROFITS OR REVENUES, BUSINESS INTERRUPTION, OR LOSS OF BUSINESS INFORMATION) ARISING IN CONNECTION WITH ANY AGREEMENT, PRODUCT, FIX OR SERVICE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR IF SUCH POSSIBILITY WAS REASONABLY FORESEEABLE. THIS EXCLUSION OF LIABILITY DOES NOT APPLY TO EITHER PARTY'S LIABILITY TO THE OTHER FOR VIOLATION OF ITS CONFIDENTIALITY OBLIGATION OR OF THE OTHER PARTY'S INTELLECTUAL PROPERTY RIGHTS.

- c. **Application.** Except as specified expressly in this Section 7, the limitations on and exclusions of liability for damages in this agreement (including any license or services agreement incorporating these terms) apply regardless of whether the liability is based on breach of contract, tort (including negligence), strict liability, breach of warranties, or any other legal theory.

8. **Verifying compliance.** You must keep records relating to the products you and any affiliate participating under a license agreement run. We have the right to verify compliance with any license agreement, at our expense, during the term of the license agreement and any enrollment and for a period of one year thereafter. To do so, we will engage an independent accountant from a nationally recognized public accounting firm, which will be subject to a confidentiality obligation. Verification will take place upon not fewer than 30 days notice, during normal business hours and in a manner that does not interfere unreasonably with your operations. As an alternative, we may require you to accurately complete our self-audit questionnaire relating to the products you and any affiliates participating under a license agreement use. If verification or self-audit reveals unlicensed use of products, you must promptly order sufficient licenses to permit all product usage disclosed. If material unlicensed use is found (license shortage of 5% or more), you must reimburse us for the costs we have incurred in verification and acquire the necessary additional licenses as single retail licenses within 30 days. If we undertake such verification and do not find material unlicensed use of products, we will not undertake another verification of the same entity for at least one year. We and our auditors will use the information obtained in compliance verification only to enforce our rights and to determine whether you are in compliance with the terms of the applicable license agreement. By invoking the rights and procedures described above, we do not waive our rights to enforce this agreement (including any license or services agreement incorporating these terms) or to protect our intellectual property by any other means permitted by law.

9. **Term and Termination.** This agreement will remain in effect until terminated. Either party to this agreement may terminate it at any time by giving at least 60 days written notice. To the extent necessary to implement the termination provisions of this agreement, each of the parties waives any right it has, or obligation that the other party may have, now or in the future under any applicable law or regulation, to request or obtain the approval, order, decision or judgment of any court to terminate this agreement. The sole effect of terminating this agreement will be to terminate the ability of either party to enter into subsequent license agreements or services agreements under this agreement. Termination of this agreement will not, by itself, result in the termination of any license or services agreements previously entered into under this agreement, and any terms of this agreement incorporated by reference into such a license or services agreement will continue in effect unless and until that license or services agreement itself is terminated or expires.

10. **Miscellaneous.**

- a. **Notices.** All notices, authorizations, and requests given or made in connection with a license or services agreement must be sent by post, express courier, facsimile, or email to the addresses and numbers indicated in the applicable license or services agreement. Any notice of termination of this agreement must be sent by post, express, courier, facsimile or email to the addresses and numbers indicated in the cover page to this agreement. Notices will be deemed delivered on the date shown on the postal return receipt or on the courier, facsimile or email confirmation of delivery.
- b. **Assignment.** This agreement and any license agreement may be assigned by either party only to an affiliate, but assignment will not relieve the assigning party of its obligations under the assigned agreement. If either party assigns this agreement or any license agreement, it must notify the other party of the assignment in writing. Neither party may assign any services agreement without the written consent of the other.
- c. **Severability.** If a court holds any provision of this agreement (including any license or services agreement incorporating these terms) to be illegal, invalid or unenforceable, the remaining provisions will remain in full force and effect and the parties will amend the agreement to give effect to the stricken clause to the maximum extent possible.
- d. **Waiver.** No waiver of any breach of this agreement (including any license or services agreement incorporating these terms) shall be a waiver of any other breach, and no waiver shall be effective unless made in writing and signed by an authorized representative of the waiving party.

- e. **Force Majeure.** To the extent that either party's performance is prevented or delayed, either totally or in part, for reasons beyond that party's control, then that party will not be liable, so long as it resumes performance as soon as practicable after the reason preventing or delaying performance no longer exists.
- f. **Dispute resolution.** If we bring an action to enforce this agreement (including any license or services agreement incorporating these terms), we will bring it in the jurisdiction where your contracting affiliate has its headquarters. If you bring an action to enforce any such license agreement entered into with any affiliate of ours located outside of Europe, you will bring it in the State of Washington. If you bring an action to enforce any such license agreement entered into with any affiliate of ours located in Europe, you will bring it in Ireland. If you bring an action to enforce any such services agreement, you will bring it in the jurisdiction where our affiliate delivering the services has its headquarters. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.
- g. **Survival.** Provisions regarding product use rights, restrictions on use, evidence of perpetual licenses, transfer of licenses, warranties, limitations of liability, confidentiality, compliance verification and obligations on termination or expiration will survive termination or expiration of this agreement and of any license or services agreement in which they are incorporated.
- h. **Non-exclusivity.** This agreement (including any license or services agreement incorporating these terms) is non-exclusive. Nothing contained in it requires you to license, use or promote Microsoft software or services exclusively. You may, if you choose, enter into agreements with other parties to license, use or promote non-Microsoft software or services.
- i. **Applicable law.** The terms of any license agreement entered into with any affiliate of ours located outside of Europe will be governed by and construed in accordance with the laws of the State of Washington and federal laws of the United States. The terms of any license agreement entered into with any affiliate of ours located in Europe will be governed by and construed in accordance with the laws of Ireland. The terms of any services agreement will be governed by the laws of the jurisdiction where our affiliate delivering the services is organized. The 1980 United Nations Convention on Contracts for the International Sale of Goods and its related instruments will not apply to this agreement or any license or service agreement entered into with any affiliate of ours under this agreement.

In any case where the law of any of the jurisdictions cited below applies, the following country-specific provisions will replace or supplement the equivalent provisions above:

Australia

Replace Section 2, Use and ownership, first sentence of the first paragraph, with the following:

Unless otherwise specified in a license agreement, use of any product that you license from us is governed by product use rights specific to each product and version and by the terms of the license agreement under which you licensed the product *and these are the only rights that you have to run any product*

Supplement Terms and Conditions, Section 5, Warranties, with the following:

- f. **Consumer Remedies.** *Notwithstanding anything in this agreement, consumers may have the benefit of certain rights or remedies pursuant to the Trade Practices Act 1974 (Cth) and similar state and territory laws in Australia in respect of which liability may not be excluded. If so, then to the maximum extent permitted by law, such liability is limited, at our option, in the case of goods to either (i) replacement of the goods or (ii) correction of defects in the goods, and in the case of services to either (i) resupply of the services or (ii) the cost of the resupply of the services.*

Supplement Terms and Conditions, subsection 10, Miscellaneous, with the following:

- j. **GST.** *If any GST is payable on any supplies made under a license or services agreement entered into by you or your affiliates under this agreement, an amount on account of this GST will also be payable by you as invoiced to you.*

Brazil

Replace Terms and Conditions, subsection 5(c), Services, with the following:

- c. **Services.** *We warrant that all services will be performed using generally accepted industry standards and practices. We will use commercially reasonable efforts in providing product support services. This warranty is valid for a period of 90 days from the date of the respective work order or service description. If you notify us within the warranty period that a service does not meet this warranty and we are not able to re-perform it accordingly to this warranty within the term established by law, currently 30 days, then we will, at your option, either (i) return the price paid for the service; (ii) re-perform the service, if feasible; (iii) offer you a discount in an amount equivalent to partial non-performance of the service, if applicable. This is your exclusive remedy for any failure of any service deliverables to function as described in this paragraph.*

Canada

For services agreements governed under the laws of Canada, replace Terms and Conditions, subsection 10(i), Applicable law, with the following:

- i. **Applicable law.** *The terms of any license agreement entered into with any affiliate of ours located outside of Europe will be governed by and construed in accordance with the laws of the State of Washington and federal laws of the United States. The terms of any license agreement entered into with any affiliate of ours located in Europe will be governed by and construed in accordance with the laws of Ireland. The terms of*

any services agreement will be governed by the laws of the *Province of Ontario and the federal laws of Canada applicable therein*. The 1980 United Nations Convention on Contracts for the International Sale of Goods and its related instruments will not apply to this agreement or any agreement entered into with any affiliate of ours under this agreement.

Supplement Terms and Conditions, Section 10, Miscellaneous, with the following:

- j. **Language.** It is the express wish of the parties that this agreement and/or any related documents have been drawn up in a language other than French. French translation: Il est de la volonté expresse des parties que le présent contrat et/ou tous les documents qui s'y rattachent soient rédigés dans une langue autre que le français.

Germany

Replace Terms and Conditions, Section 5, Warranties, with the following:

5. **Agreed Characteristics; Claims due to Defects in Quality and Defects in Title.** To the extent that we should be required to supply a yet to be produced movable thing (*herzustellende, bewegliche Sache*) or to the extent our Services are, exceptionally, considered work performances (*Werkleistungen*), the following provisions will apply to claims due to defects in quality or defects in title (collectively referred to as "**Defects**") but will not apply where the claims are for damages or reimbursement of expenses.

The provisions contained in Section 7 shall apply to claims for damages or expenses resulting from Defects.

- a. Your rights and their expiry will be exclusively determined in accordance with applicable statutory law in the event of malicious non-disclosure of a Defect (*arglistiges Verschweigen*) or in the event of a guarantee relating to characteristics of a supplied, yet to be produced, movable thing (*gelieferte, herzustellende, bewegliche Sache*) or relating to work performances (*Beschaffheitsgarantie*) (§§ 651, 444 and 639 of the German Civil Code (BGB)).
- b. We give you express notice that, based on the current state of technology, it is not possible to develop complex software products that are completely free of technical defects. The contractually-specified characteristics (*vertragliche Beschaffenheit*) for the software to be provided by us does not require that the software be completely free of programming errors but merely that the software be free of programming errors that materially impair its use.
- c. Our obligations will not apply to the extent that a claim is based on (i) specifications, code, or materials you provided; (ii) use of, or access to, service deliverables by any person or entity other than you or your Affiliates as permitted by the applicable statement of services; (iii) your use of service deliverables after we notify you to discontinue their use due to such a claim; (iv) your combining service deliverables with non-Microsoft products, data or business processes.
- d. To the extent we are required to supply a yet to be produced movable thing, you may only make a claim against us if you have properly complied with your obligation to notify us of all Defects in accordance with § 377 of the German Commercial Code (HGB). You must provide us with written notification of any apparent Defect found by you during your examination according to § 377 of the German Commercial Code immediately, but no later than within two weeks after delivery. You must notify us in writing of any hidden Defects immediately after discovery.
- e. We will rectify Defects of which you have given us notice prior to the expiry of the limitation period stipulated in this section. To the extent you have made a claim against us for subsequent performance (*Nacherfüllung*) we will have the right, in our sole discretion, to either rectify the Defect, or to supply a new movable thing, or, if the defect is in a work performance, to create a new work free of Defects. You agree to cooperate in our subsequent performance by providing any required information and documentation and to provide all reasonable assistance.

- f. You may be entitled to rescind the respective services agreement – to the extent rescission is not excluded by statutory law - or to reduce payment only after an appropriate deadline set by you for subsequent performance of at least three weeks has expired, unless that deadline is not required by statutory law
- g. In the event we prove that there was no Defect for which we were responsible based on this section, we will be entitled to require reimbursement of the expenses, based on our standard rates, incurred for our efforts to carry out subsequent performance
- h. You may not make a claim under this section if you or a third party have altered the supplied, yet to be produced moveable thing or the work performance without our consent, unless you are able to prove that the Defects in question were not caused by that alteration
- i. All claims to which you are entitled pursuant to this Section 5 will expire within one year. For a supplied, yet to be produced, movable thing, the limitation period will start on the delivery date; in cases of work performances, the limitation period will start on the date of acceptance (Abnahme).

The foregoing shall not affect the provision contained in § 438, paragraph 1 Nr. 1 a) of the German Civil Code.

Replace Terms and Conditions, Section 7, Limitation of liability, with the following:

7. Limitation of liability.

There may be situations in which you have a right to claim damages or reimbursement of futile (Ersatz vergeblicher Aufwendungen) expenses from us. Whatever the legal basis for your claim (breach of contract, Defects, tort or otherwise), our liability for any and all resultant damages will be limited as follows:

- a. In cases of intentional acts, claims under the German Product Liability Act, malicious non-disclosure of a Defect, or a guarantee in respect of characteristics of a yet to be produced, supplied, movable thing or a work performance (Beschaffenheitsgarantie) (§§ 651, 444 and 639 of the German Civil Code (BGB)) as well as claims based on damage to life, body or health, our liability will be determined exclusively in accordance with statutory law.
- b. **Gross negligence.** In cases of gross negligence, our liability will be limited to typical foreseeable damages. This limitation does not apply to the extent damages have been caused by our managing employees or legal representatives.
- c. **Slight negligence.** In cases of slight negligence we will only be liable in case of a breach of material contractual obligation. In such cases, our liability will be limited to typical, foreseeable damages. In all other cases of slight negligence our liability is excluded.
- d. **Liability without fault (verschuldensunabhängige Haftung).** In cases of liability without fault for an inability to perform during delayed performance, our liability will also be limited to typical foreseeable damages.
- e. In cases where we are required to supply a yet to be produced movable thing, any claim for damages or expenses due to Defects is conditional upon your compliance with your obligations described in Section 5(d) above to notify us of all Defects.
- f. Any claim for damages or expenses resulting from Defects will expire within one year. For a supplied, yet to be produced, movable thing, the limitation period will start on the delivery date; in cases of work performances, the limitation period will start on the date of acceptance (Abnahme). This provision does not affect § 438, paragraph 1 Nr. 1 a) of the German Civil Code.

Any other claims against us for damages or expenses will expire within two years from the date the cause of action arises.

The provision contained in this subsection 7(f) shall not apply to the cases governed by subsection 7(a) above or in case of grossly negligent behavior on our part. In such cases statutory law shall apply.

Indonesia

Replace Terms and Conditions, subsection 10(f), Dispute resolution, with the following:

- f. **Dispute resolution.** Any dispute arising out of or in connection with this agreement, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration in Singapore in accordance with the Arbitration Rules of the Singapore International Arbitration Centre, which rules are deemed to be incorporated by reference into this clause. The Tribunal shall consist of one arbitrator to be appointed by the Chairman of SIAC. The language of the arbitration shall be English. The decision of the arbitrator shall be final, binding and incontestable and may be used as a basis for judgment thereon in Indonesia or elsewhere. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.

Latin America, including countries in South and Central America and the Caribbean (except Brazil and territories of France, Netherlands, U.K. and U.S.)

Supplement Terms and Conditions, Section 10, Miscellaneous, with the following:

- j. **Stamp tax.** We will not be responsible for any stamp taxes that might be owed pursuant to this agreement or to any license or service agreement entered by you and/or your affiliates. Upon our request, you and your affiliates will provide to us evidence of payment of the appropriate stamp taxes to the appropriate authorities.

Malaysia

Supplement Terms and Conditions, Section 5, Warranties, with the following:

- e. **Consumer Remedies.** Notwithstanding anything in this agreement, consumers may have the benefit of certain rights or remedies pursuant to the Consumer Protection Act in Malaysia in respect of which liability cannot be excluded or restricted. If permitted by law and to the maximum extent permitted by law, such liability is limited, at our option, in the case of goods to either (i) replacement of the goods or (ii) correction of defects in the goods, and in the case of services to either (i) re-supply of the services or (ii) the cost of the re-supply of the services.

New Zealand

Supplement Terms and Conditions, subsection 10, Miscellaneous, with the following:

- j. **Statutory liability.**
- (i) **Business.** Where we are a supplier (as that term is defined in the Consumer Guarantees Act 1993 ("CGA")) of the products or other goods or services, you confirm that the products or other goods or services provided by us under a license or services agreement are acquired for the purposes of a business (as that term is defined in the CGA) and you agree that the CGA does not apply to the products or other goods or services supplied by us.
 - (ii) **Consumers.** Subject to subsection (i) above, nothing in this agreement is otherwise intended to limit the rights of a "consumer" under the CGA where that Act applies, and the terms of this agreement are to be modified to the extent necessary to give effect to this intention.

- (iii) **On-Supply** If you on-supply to any person you must include the following clause in the terms of all agreements for the on-supply of products: "Where you are acquiring products or services for the purposes of a business, you acknowledge and agree that Microsoft Corporation and its affiliates have no liability or obligation to you under the Consumer Guarantees Act 1993 and where you on-supply the products or services you must include all of this clause in the terms of that on-supply"
- (iv) **Failure to Comply.** You must indemnify and keep us and our affiliates indemnified and hold us and our affiliates free and harmless from any costs, expenses, loss or damages incurred by us or our affiliates as a result of you or any purchaser or acquirer from you failing to comply with the obligations contained in this section.

PRC

Replace Terms and Conditions, subsection 10(f), Dispute resolution, with the following:

- f. **Dispute resolution.** If we bring an action to enforce a license or a services agreement, we will bring it in the jurisdiction where your contracting affiliate has its headquarters. If in this case your contracting affiliate has its headquarters in the PRC, any action by us to enforce a license or a services agreement will be submitted to binding arbitration at the China International Economic and Trade Arbitration Commission in Beijing (CIETAC) in accordance with its rules in effect from time to time. If you bring an action to enforce a license agreement entered into with any affiliate of ours located outside of Europe, you will bring it in the courts of the State of Washington. If you bring an action to enforce a license agreement entered into with any affiliate of ours located in Europe, you will bring it in Ireland. If you bring an action to enforce a services agreement, you will bring it in the jurisdiction where our affiliate delivering the services has its headquarters. If in this case our affiliate delivering services has its headquarters in the PRC, any action by you to enforce a services agreement will be submitted to binding arbitration at CIETAC in accordance with its rules in effect from time to time. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.

England and Wales

Replace Terms and Conditions, subsection 7(b), No liability for certain damages, with the following:

- b. **No liability for certain damages.** To the maximum extent permitted by applicable law, neither party nor any of its affiliates or suppliers will be liable for any consequential or special damage, loss of profit or revenue or any indirect damages (including, without limitation business interruption, or loss of business information) arising in connection with any agreement, product or service, even if advised of the possibility of such damages or if such possibility was reasonably foreseeable. This exclusion of liability does not apply to either party's liability to the other for violation of its confidentiality obligation or of the other party's intellectual property rights.

Supplement Terms and Conditions, section 7, Limitation of liability, with the following:

- d. **Liability for death or personal injury.** Nothing in this agreement shall exclude liability for death or personal injury caused by negligence or liability for fraudulent misrepresentation.

Vietnam

Supplement Terms and Conditions, section 9, Termination, with the following:

Without any liability to you, we reserve the right to either terminate or vary this agreement or any license agreement or services agreement, if we are required to use a statutory form. If we choose to terminate any such agreement for this reason, all your rights granted under it will terminate.

Replace Terms and Conditions, subsection 10(f), Dispute Resolution, with the following:

- f. **Dispute Resolution.** All disputes, claims or proceedings between the parties relating to the validity, construction or performance of this agreement shall be settled by arbitration in accordance with UNCITRAL Arbitration Rules as at present in force. The appointing authority shall be the International Chamber of Commerce ("ICC") acting in accordance with the rules adopted by the ICC for this purpose and the place of arbitration will be the State of Washington, U.S.A. There shall only be one arbitrator. The award shall be final and binding on the parties. The parties hereto irrevocably agree to submit all matters and disputes arising in connection with this agreement to arbitration in Washington. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.

EXHIBIT 2

JS 44 (Rev 11/04)

CIVIL COVER SHEET

The JS-44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM.)

I. (a) PLAINTIFFS

QuinStreet, Inc.

(b) County of Residence of First Listed Plaintiff San Mateo County, CA
(EXCEPT IN U S PLAINTIFF CASES)

(c) Attorney's (Firm Name, Address, and Telephone Number)

Jeffrey L. Moyer
Anne Shea Gaza
Richards, Layton & Finger
One Rodney Square
920 North King Street
Wilmington, DE 19801
302-651-7700

DEFENDANTS

Microsoft Corporation

County of Residence of First Listed Defendant Redmond, Washington
(IN U S PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED

Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an "X" in One Box Only)

- ☐ 1 U.S. Government Plaintiff ☐ 3 Federal Question (U.S. Government Not a Party)
- ☐ 2 U.S. Government Defendant ☒ 4 Diversity (Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant)

- | | | | | | |
|---|--------------------------------|--------------------------------|---|---------------------------------------|---------------------------------------|
| Citizen of This State | PTF <input type="checkbox"/> 1 | DEF <input type="checkbox"/> 1 | Incorporated or Principal Place of Business in This State | PTF <input type="checkbox"/> 4 | DEF <input type="checkbox"/> 4 |
| Citizen of Another State | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 | Incorporated and Principal Place of Business in Another State | <input checked="" type="checkbox"/> 5 | <input checked="" type="checkbox"/> 5 |
| Citizen or Subject of a Foreign Country | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 | Foreign Nation | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |

IV. NATURE OF SUIT (Place an "X" in One Box Only)

CONTRACT	TORTS	FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES	
<input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (excl. Veterans) <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits <input type="checkbox"/> 160 Stockholder's Suits <input checked="" type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability <input type="checkbox"/> 196 Franchise REAL PROPERTY <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Eject <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	PERSONAL INJURY <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury CIVIL RIGHTS <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 444 Welfare <input type="checkbox"/> 445 Amer. w/Disabilities - Employment <input type="checkbox"/> 446 Amer. w/Disabilities - Other <input type="checkbox"/> 440 Other Civil Rights	PERSONAL INJURY <input type="checkbox"/> 362 Personal Injury - Med. Malpractice <input type="checkbox"/> 365 Personal Injury - Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability PERSONAL PROPERTY <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth In Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability PRISONER PETITIONS <input type="checkbox"/> 510 Motions to Vacate Sentence Habeas Corpus: <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition	<input type="checkbox"/> 610 Agriculture <input type="checkbox"/> 620 Other Food & Drug <input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881 <input type="checkbox"/> 630 Liquor Laws <input type="checkbox"/> 640 R R & Truck <input type="checkbox"/> 650 Airline Regs <input type="checkbox"/> 660 Occupational Safety/Health <input type="checkbox"/> 690 Other LABOR <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Mgmt. Relations <input type="checkbox"/> 730 Labor/Mgmt. Reporting & Disclosure Act <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Empl. Ret. Inc. Security Act	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 PROPERTY RIGHTS <input type="checkbox"/> 820 Copyrights <input type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark SOCIAL SECURITY <input type="checkbox"/> 861 HIA (1395f) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g)) FEDERAL TAX SUITS <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS - Third Party 26 USC 7609	<input type="checkbox"/> 400 State Reappointment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 480 Consumer Credit <input type="checkbox"/> 490 Cable/Sat TV <input type="checkbox"/> 810 Selective Service <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 875 Customer Challenge 12 USC 3410 <input type="checkbox"/> 890 Other Statutory Actions <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 892 Economic Stabilization Act <input type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 894 Energy Allocation Act <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice <input type="checkbox"/> 950 Constitutionality of State Statutes

V. ORIGIN

(Place an "X" in One Box Only)

- ☒ Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from another district (specify) ☐ 6 Multidistrict Litigation ☐ 7 Appeal to District Judge from Magistrate Justice

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity): 28 U.S.C. §§1331, 1332 and 1338

Brief description of cause: Action for defense and contribution

VII. REQUESTED IN COMPLAINT

☐ CHECK IF THIS IS A CLASS ACTION UNDER F.R.C.P. 23

DEMAND \$

CHECK YES only if demanded in complaint:

JURY DEMAND: ☐ Yes ☒ No

VIII. RELATED CASE(S) IF ANY

(See instructions):

JUDGE

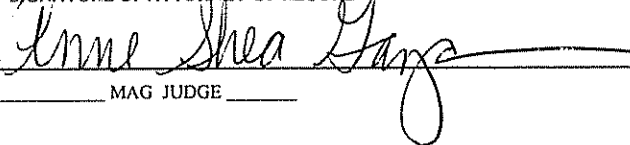
DOCKET NUMBER

Sue L. Robinson

06-414, 06-495

DATE January 4, 2008

SIGNATURE OF ATTORNEY OF RECORD



FOR OFFICE USE ONLY

RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG JUDGE _____

INSTRUCTIONS FOR ATTORNEYS COMPLETING CIVIL COVER SHEET FORM JS-44

Authority For Civil Cover Sheet

The JS-44 civil cover sheet and the information contained herein neither replaces nor supplements the filings and service of pleading or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. Consequently a civil cover sheet is submitted to the Clerk of Court for each civil complaint filed. The attorney filing a case should complete the form as follows:

I. (a) Plaintiffs - Defendants. Enter names (last, first, middle initial) of plaintiff and defendant. If the plaintiff or defendant is a government agency, use only the full name or standard abbreviations. If the plaintiff or defendant is an official within a government agency, identify first the agency and then the official, giving both name and title.

(b) County of Residence. For each civil case filed, except U.S. plaintiff cases, enter the name of the county where the first listed plaintiff resides at the time of filing. In U.S. plaintiff cases, enter the name of the county in which the first listed defendant resides at the time of filing. (NOTE: In land condemnation cases, the county of residence of the "defendant" is the location of the tract of land involved.)

(c) Attorneys. Enter firm name, address, telephone number, and attorney of record. If there are several attorneys, list them on an attachment, noting in this section "(see attachment)".

II. Jurisdiction. The basis of jurisdiction is set forth under Rule 8 (a), F.R.C.P., which requires that jurisdictions be shown in pleadings. Place an "X" in one of the boxes. If there is more than one basis of jurisdiction, precedence is given in the order shown below.

United States plaintiff. (1) Jurisdiction is based on 28 U.S.C. 1345 and 1348. Suits by agencies and officers of the United States are included here.

United States defendant. (2) When the plaintiff is suing the United States, its officers or agencies, place an X in this box.

Federal question. (3) This refers to suits under 28 U.S.C. 1331, where jurisdiction arises under the Constitution of the United States, an amendment to the Constitution, an act of Congress or a treaty of the United States. In cases where the U.S. is a party, the U.S. plaintiff or defendant code takes precedence, and box 1 or 2 should be marked.

Diversity of citizenship. (4) This refers to suits under 28 U.S.C. 1332, where parties are citizens of different states. When Box 4 is checked, the citizenship of the different parties must be checked. (See Section III below; federal question actions take precedence over diversity cases.)

III. Residence (citizenship) of Principal Parties. This section of the JS-44 is to be completed if diversity of citizenship was indicated above. Mark this section for each principal party.

IV. Cause of Action. Report the civil statute directly related to the cause of action and give a brief description of the cause.

V. Nature of Suit. Place an "X" in the appropriate box. If the nature of suit cannot be determined, be sure the cause of action, in Section IV above, is sufficient to enable the deputy clerk or the statistical clerks in the Administrative Office to determine the nature of suit. If the cause fits more than one nature of suit, select the most definitive.

VI. Origin. Place an "X" in one of the seven boxes.

Original Proceedings. (1) Cases which originate in the United States district courts.

Removed from State Court. (2) Proceedings initiated in state courts may be removed to the district courts under Title 28 U.S.C. Section 1441. When the petition for removal is granted, check this box.

Remanded from Appellate Court. (3) Check this box for cases remanded to the district court for further action. Use the date of remand as the filing date.

Reinstated or Reopened. (4) Check this box for cases reinstated or reopened in the district court. Use the reopening date as the filing date.

Transferred from Another District. (5) For cases transferred under Title 28 U.S.C. Section 1404(a). Do not use this for within district transfers or multidistrict litigation transfers.

Multidistrict Litigation. (6) Check this box when a multidistrict case is transferred into the district under authority of Title 28 U.S.C. Section 1407. When this box is checked, do not check (5) above.

Appeal to District Judge from Magistrate Judgment. (7) Check this box for an appeal from a magistrate's decision.

VII. Requested in Complaint. Class Action. Place an "X" in this box if you are filing a class action under Rule 23, F.R.C.P.

Demand. In this space enter the dollar amount (in thousands of dollars) being demanded or indicate other demand such as a preliminary injunction.

Jury Demand. Check the appropriate box to indicate whether or not a jury is being demanded.

VIII. Related Cases. This section of the JS-44 is used to reference relating pending cases if any. If there are related pending cases, insert the docket numbers and the corresponding judge names for such cases.

Date and Attorney Signature. Date and sign the civil cover sheet.
(rev. 07/89)

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUINSTREET, INC.,

Plaintiff,

v.

PARALLEL NETWORKS, LLC,

Defendant.

C.A. 06-495 (SLR)

QUINSTREET, INC.,

Third-Party Plaintiff,

v.

MICROSOFT CORPORATION,

Third-Party Defendant.

**QUINSTREET'S THIRD-PARTY COMPLAINT
AGAINST MICROSOFT CORPORATION**

Plaintiff and now third-party Plaintiff QUINSTREET, INC. ("QuinStreet"), by their attorneys, for its third-party complaint against third-party defendant MICROSOFT CORPORATION ("Microsoft"), hereby states as follows:

Parties, Jurisdiction and Venue

1. QuinStreet is a California corporation, with a principal place of business at Foster City, California 94404.

2. Microsoft is a Washington corporation with its principal offices at One Microsoft Way, Redmond, Washington 98502, and is doing business in the District of Delaware.

3. This Court has jurisdiction of this action under 28 U.S.C. §§ 1331, 1332 and 1338.

4. Microsoft as America's largest software corporation has done and continues to do substantial business throughout the United States including in the District of Delaware. Microsoft meets the "minimum contacts" required with the District of Delaware so as to render this venue a fair and reasonable one. The District of Delaware is a proper venue under 28 U.S.C. §§ 1391 and 1400.

Background Information

5. On August 5, 2005, epicRealm Licensing, LLC ("epicRealm") filed a Complaint against six defendants, including Herbalife International of America, Inc. ("Herbalife"), in the Eastern District of Texas alleging infringement of United States Patent Nos. 5,894,554 and 6,415,335. EpicRealm specifically claimed that all of the defendants used and were using software and hardware systems and methods for managing dynamic web page generation requests that fell within the scope of one or more of the claims of the foregoing patents. As a result, epicRealm alleged that Herbalife and the others had and were infringing one or more of the claims of the foregoing patents as defined by 35 U.S.C. § 271(a), (b) and/or (c). A copy of epicRealm's original Complaint is attached hereto as Exhibit A. A first Amended Complaint was filed on November 2, 2005. A copy of this Amended Complaint is attached hereto as Exhibit B.

6. Herbalife has denied the allegations of the Amended Complaint and has filed its Answer and Counterclaims against epicRealm on November 17, 2005. A copy of Herbalife's Answer and Counterclaims is attached hereto as Exhibit C.

7. The Herbalife web site specifically accused by epicRealm in the aforementioned suit was hosted by QuinStreet. Pursuant to an indemnification provision in the hosting

agreement between Herbalife and QuinStreet and at the request of Herbalife, in February 2006 QuinStreet undertook the defense and indemnification of Herbalife. QuinStreet also denies the allegations made against Herbalife.

8. On August 8, 2006, QuinStreet filed a declaratory judgment action in the District Court for the District of Delaware against epicRealm claiming that, as a service provider that employs a plurality of systems for dynamic web page generation including the Microsoft IIS server and in light of the claims asserted in the Texas lawsuit, it has a reasonable apprehension that epicRealm will accuse QuinStreet of infringement for using those technologies. QuinStreet's Complaint for Declaratory Judgment is attached hereto as Exhibit D.

9. On April 13, 2007, epicRealm Licensing, LP., filed an answer and counterclaim alleging that QuinStreet's use of systems and methods for managing dynamic web page generation requests infringed one or more claims of the epicRealm's patents-in-suit. epicRealm's Answer is attached hereto as Exhibit E.

10. epicRealm has consistently contended in the Texas lawsuit that Microsoft's IIS software can be configured in ways that infringe its patents. epicRealm has taken that same position in this case and has refused to state that its counterclaim of infringement asserted herein does not apply to the IIS platforms used by QuinStreet. As a result, QuinStreet is defending against epicRealm's claim that QuinStreet's use of Microsoft IIS web server technology in managing dynamic web page generation requests may infringe the epicRealm patents.

Claim for Defense and Indemnity

11. Microsoft is the owner and designer of the Microsoft Internet Information Services (IIS) suite of web servers.

12. QuinStreet licensed Microsoft IIS software for use in its computer systems for the purpose, among others, of managing and responding to dynamic web page generation requests.

The Windows Server 2003 (IIS version 5.0) is part of the Enterprise 6 Standard Microsoft package as part of the Microsoft Volume Licensing Service (MVLS).

13. QuinStreet and Microsoft entered into Microsoft Business Agreement No. U3475507 effective June 12, 2003 in which Microsoft represents and warrants with respect to any Microsoft software licensed for the licensee's use that it will defend the licensee against any of the following claims made by an unaffiliated third party, and will pay the amount of any resulting adverse final judgment (or settlement to which it consents):

- a. claims that any commercial product or fix infringes the third party's patent, copyright or trademark or misappropriates its trade secret, or
- b. claims that any service deliverable infringes the third party's copyright or trademark, or misappropriates its trade secret.

Relevant portions of the Microsoft Business Agreement are attached as Exhibit F.

14. QuinStreet has installed and used and/or uses its IIS software platforms according to the instructions provided and as intended by Microsoft. If QuinStreet's computer systems running Microsoft IIS infringe any claim of the aforesaid patents, such infringement would arise by reason of the use and functionality of the software licensed from Microsoft by QuinStreet.

15. QuinStreet has notified Microsoft of the epicRealm claim and has requested that Microsoft undertake its defense and provide indemnification, but thus far Microsoft has failed to do so.

16. The matter in controversy exceeds the sum or value of \$75,000, exclusive of interest and costs.

Demand for Jury

17. QuinStreet requests trial by jury pursuant to Federal Rule of Civil Procedure 38 for all issues triable of right by a jury.

18. QuinStreet's Prayer for Relief

Wherefore, QuinStreet respectfully requests that this Court:

- (a) Award QuinStreet such amount as QuinStreet may be required to pay Parallel Networks, LLC with respect to any infringement damages attributed to the use of any Microsoft IIS server software;
- (b) Award QuinStreet costs, together with reasonable attorneys' fees and all other expenses for this suit; and
- (c) Award QuinStreet such other relief as this Court may deem just and proper.

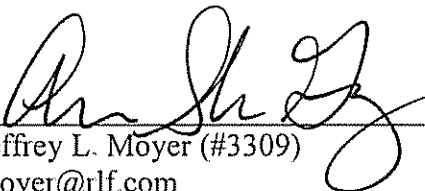
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Attorneys for Plaintiff QUINSTREET, INC.

EXHIBIT A

Remedies Code, Franklin Covey may be served with process by service upon the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701

3 On information and belief, defendant Clark Consulting, Inc., ("Clark") is a Delaware corporation, with its principal place of business at 102 S. Wynstone Park Dr #100, North Barrington, Illinois, 60010, and is doing business in the Eastern District and elsewhere in the State of Texas. Clark may be served with process by service upon its registered agent, CT Corporation System, 350 N. St. Paul St., Dallas, Texas 75201

4. On information and belief, defendant The Macerich Company ("Macerich") is a California corporation, with its principal place of business at 401 Wilshire Blvd., Suite 700, Santa Monica, California 90401, Attention: Arthur M. Coppola, President and CEO. Although Macerich has done — and continues to do — business in the Eastern District and elsewhere in the State of Texas, it has not designated or maintained an agent for service of process in Texas. Accordingly, pursuant to Section 17.044 of the Texas Civil Practice and Remedies Code, Macerich may be served with process by service upon the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701

5 On information and belief, defendant Safelite Group, Inc., ("Safelite") is a Delaware corporation, with its principal place of business at 2400 Farmers Drive, Columbus, Ohio 43235, Attention: Dan Wilson, President and CEO. Although Safelite has done — and continues to do — business in the Eastern District and elsewhere in the State of Texas, it has not designated or maintained an agent for service of process in Texas. Accordingly, pursuant to Section 17.044 of the Texas Civil Practice and Remedies Code, Safelite may be served with process by service upon the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701

6 On information and belief, defendant Herbalife International of America, Inc., ("Herbalife") is a California corporation, with its principal place of business at 9800 South La Cienega Blvd, Inglewood, California 90301, and is doing business in the Eastern District and elsewhere in the State of Texas. Herbalife may be served with process by service upon its registered agent, United States Corp Company, 701 Brazos Street, Suite 1050, Austin, Texas 78701.

7 On information and belief, defendant Pink Sheets, LLC, ("Pink Sheets") is an New York limited liability company, with its principal place of business at 304 Hudson St 2nd Floor, New York, New York 10013, Attention: R Cromwell Coulson, Chairman and CEO. Although Pink Sheets has done — and continues to do — business in the Eastern District and elsewhere in the State of Texas, it has not designated or maintained an agent for service of process in Texas. Accordingly, pursuant to Section 17.044 of the Texas Civil Practice and Remedies Code, Pink Sheets may be served with process by service upon the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701.

II. JURISDICTION AND VENUE

8 This infringement action arises under the patent laws of the United States, title 35, United States Code. This Court has jurisdiction of this action under 28 U.S.C. §§ 1331, 1338(a).

9 All of the defendants have done — and continue to do — business in the Eastern District of Texas. All defendants have minimum contacts with the Eastern District of Texas such that this venue is a fair and reasonable one. The defendants have committed purposeful acts or transactions in the State of Texas such that they reasonably knew and expected that they could be haled into a Texas court as a consequence of such activity. Accordingly, venue in the Eastern District of Texas is proper under 28 U.S.C. §§ 1391(b), 1400(b).

III. PATENT INFRINGEMENT

10 On April 13, 1999, and July 2, 2002, United States Patent Nos. 5,894,554 and 6,415,335 B1, which are collectively referred to as the "epicRealm Patents," duly and legally issued. These two patents concern, among other things, systems and methods for managing dynamic Web page generation requests. Copies of the epicRealm Patents are attached hereto as Exhibits "A" and "B" and made a part hereof

11 EpicRealm is the owner of the epicRealm Patents and has the right to enforce those patents with respect to the defendants

12 On information and belief, defendants use systems and methods for managing dynamic Web page generation requests within the scope of one or more of the claims of the epicRealm Patents. As a result, all of the defendants have been and still are infringing one or more of the claims of the epicRealm Patents as defined by 35 U S C § 271. EpicRealm has suffered damage by reason of defendants' infringement and will continue to suffer additional damage until this Court enjoins the infringing conduct

13 To the extent that defendants have continued or do continue their infringing activities after receiving notice of the epicRealm Patents, such infringement is willful, entitling epicRealm to the recovery of increased damages under 35 U S C § 284

14 This is an "exceptional case" justifying an award of attorneys' fees and costs to epicRealm pursuant to 35 U S C § 285.

15 EpicRealm believes that defendants will continue to infringe the epicRealm Patents unless enjoined by this Court. Such infringing activity causes epicRealm irreparable harm and will continue to cause such harm without the issuance of an injunction.

IV. JURY DEMAND

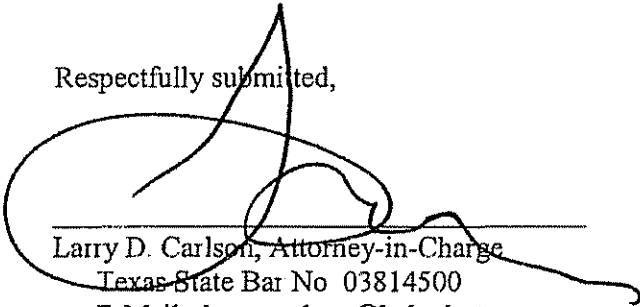
16. Plaintiff requests trial by jury pursuant to Federal Rule of Civil Procedure 38.

V. PRAYER FOR RELIEF

17. EpicRealm requests that the Court find in its favor and against defendants and that the Court grant the following relief:

- a. Judgment that one or more of the claims of the epicRealm Patents have been infringed, either literally and/or under the doctrine of equivalents, by defendants;
- b. Judgment in favor of epicRealm for the full amount of its actual damages caused by defendants' infringing activities, including an assessment of interest and costs;
- c. Judgment for increased damages for willful infringement pursuant to 35 U.S.C. § 284;
- d. Judgment that this is an "exceptional case" and awarding epicRealm its reasonable attorneys' fees and costs pursuant to 35 U.S.C. § 285;
- e. That defendants be permanently enjoined from further activity or conduct that infringes the claims of the epicRealm Patents; and
- f. That the Court award epicRealm such other and further relief as is just and proper under the circumstances.

Respectfully submitted,



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ATTORNEYS FOR PLAINTIFF
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US005894554A

United States Patent [19]

Lowery et al.

[11] Patent Number: **5,894,554**[45] Date of Patent: **Apr. 13, 1999**

[54] **SYSTEM FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS BY INTERCEPTING REQUEST AT WEB SERVER AND ROUTING TO PAGE SERVER THEREBY RELEASING WEB SERVER TO PROCESS OTHER REQUESTS**

[75] Inventors: **Keith Lowery Richardson; Andrew B. Levine, Plano; Ronald L. Howell, Rowlett, all of Tex.**

[73] Assignee: **InfoSpinner, Inc. Richardson Tex.**

[21] Appl No.: **08/636,477**

[22] Filed: **Apr. 23, 1996**

[51] Int. Cl.⁶ **G06F 13/14; G06F 13/20**

[52] U.S. Cl. **395/200.33; 395/200.68; 395/200.75; 395/680; 707/10; 707/104**

[58] Field of Search **358/400; 395/800; 395/700 200.68 200.75 200.53 680, 200.33; 707/104, 10**

[56] **References Cited****U.S. PATENT DOCUMENTS**

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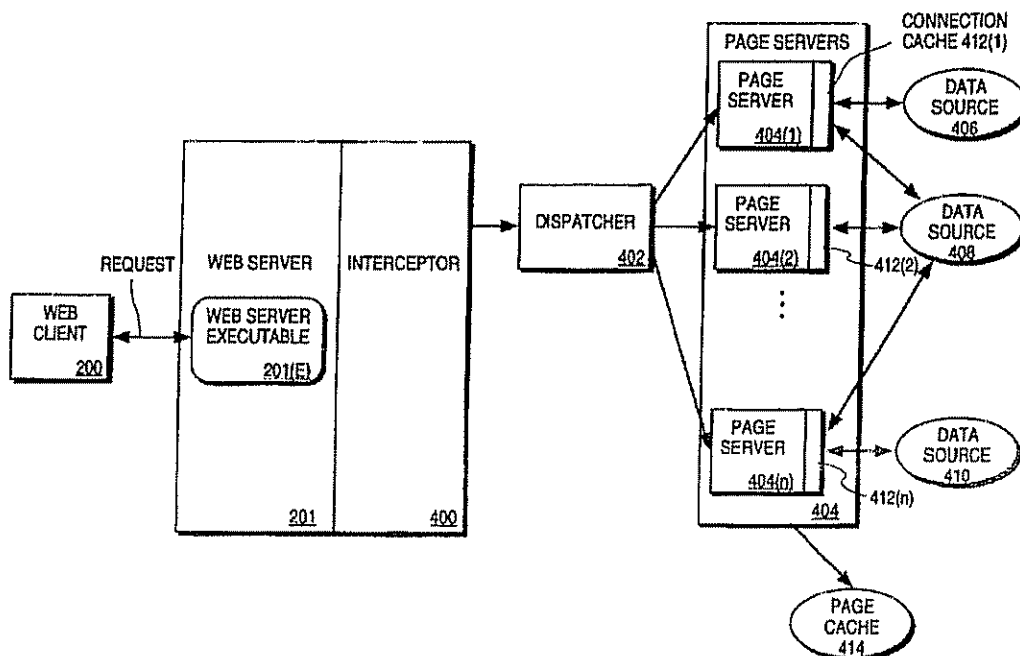
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PCT International Search Report, Aug. 21, 1997.

Primary Examiner—Thomas C. Lee
Assistant Examiner—Rehana Perveen
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman LLP

[57] **ABSTRACT**

The present invention teaches a method and apparatus for creating and managing custom Web sites. Specifically, one embodiment of the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server. the computer-implemented method comprising the steps of routing the request from the Web server to a page server. the page server receiving the request and releasing the Web server to process other requests. processing the request the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request. the Web page including data dynamically retrieved from one or more data sources.

11 Claims, 5 Drawing Sheets**EXHIBIT****A**

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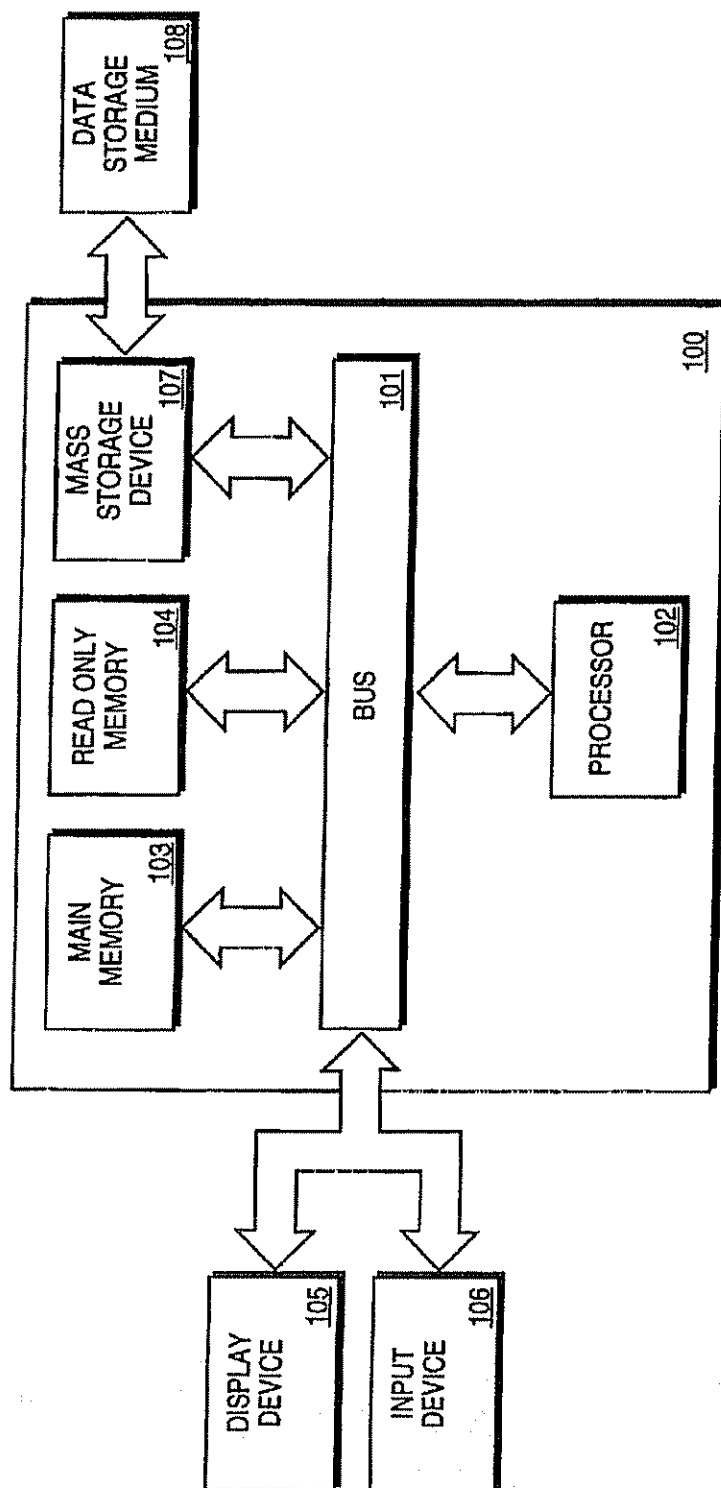


FIG. 1

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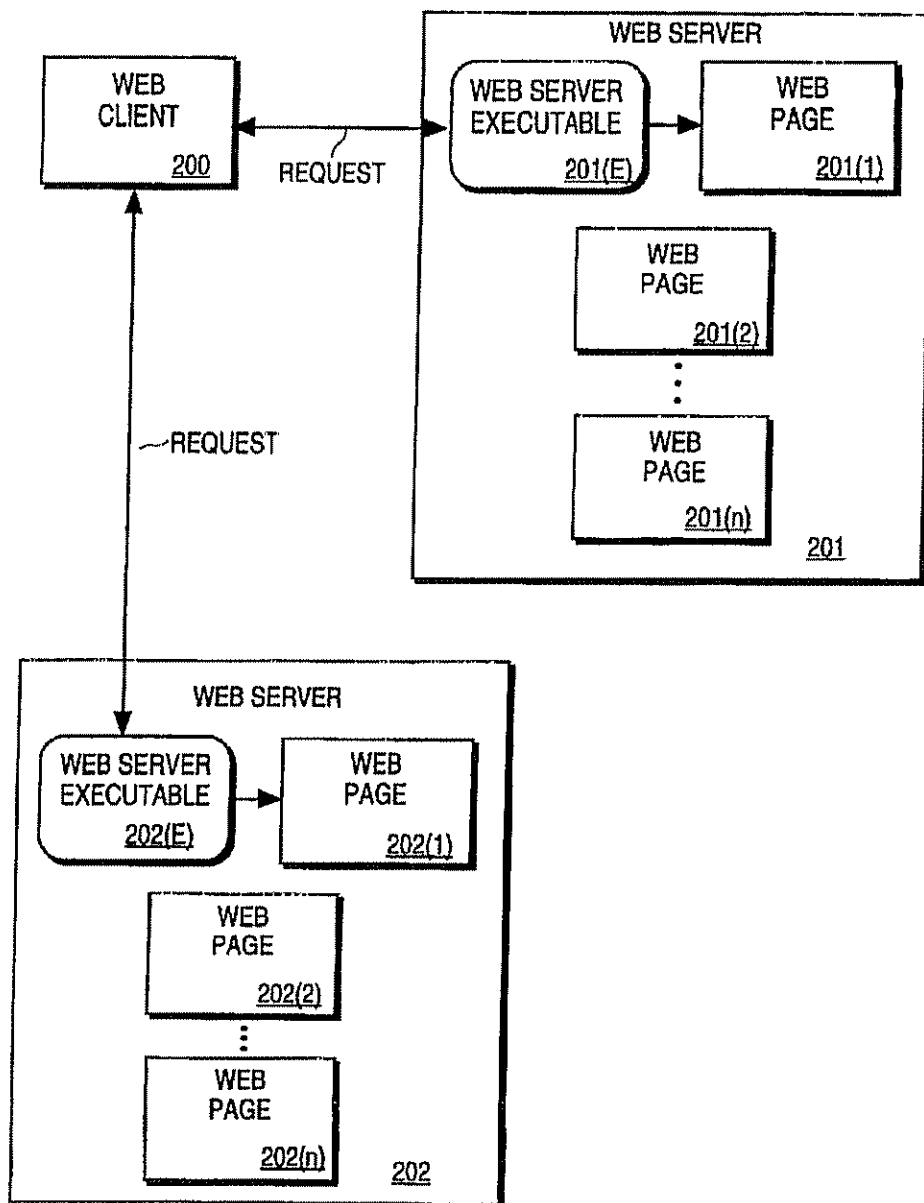


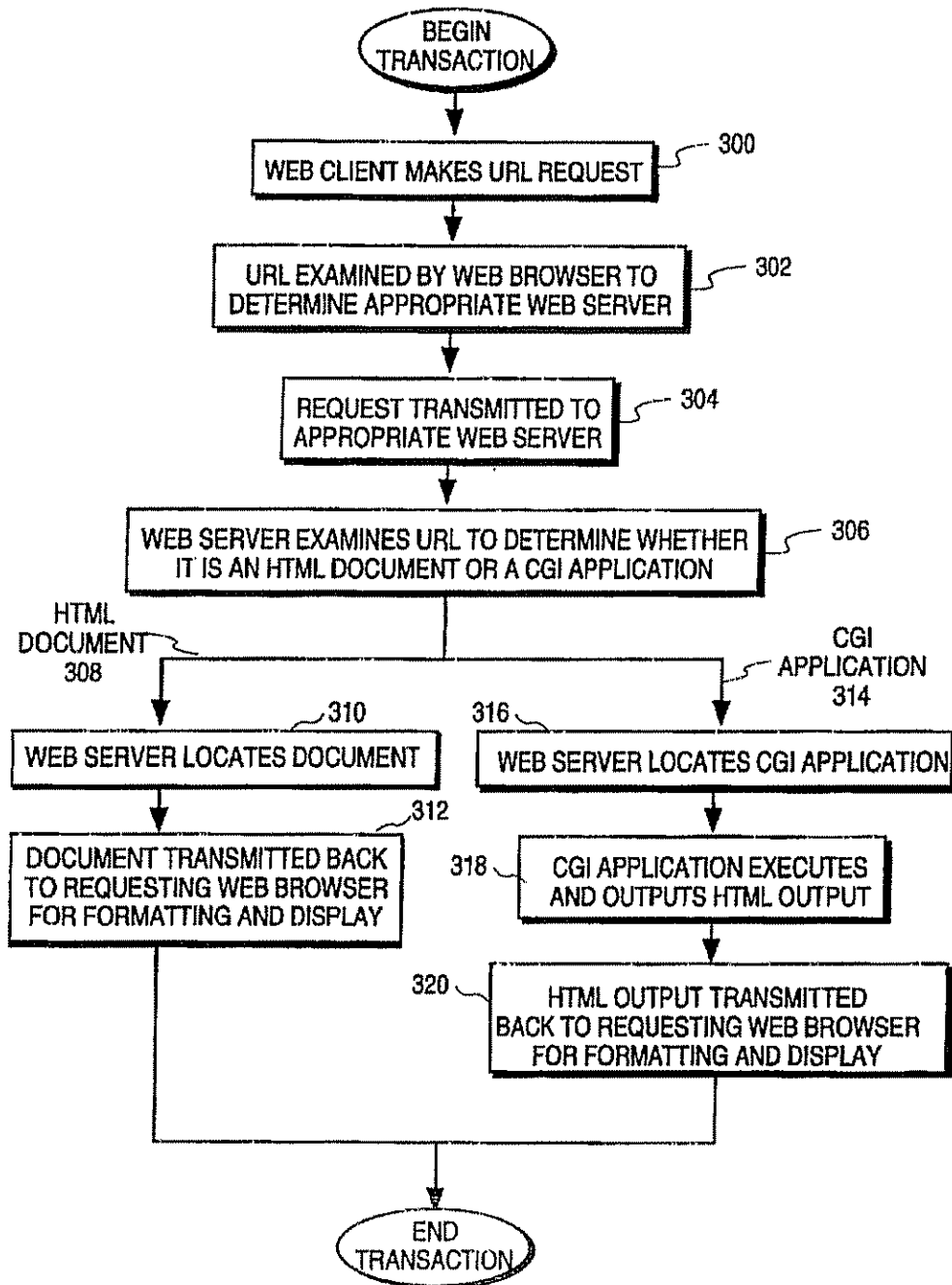
FIG. 2 (PRIOR ART)

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**FIG. 3** (PRIOR ART)

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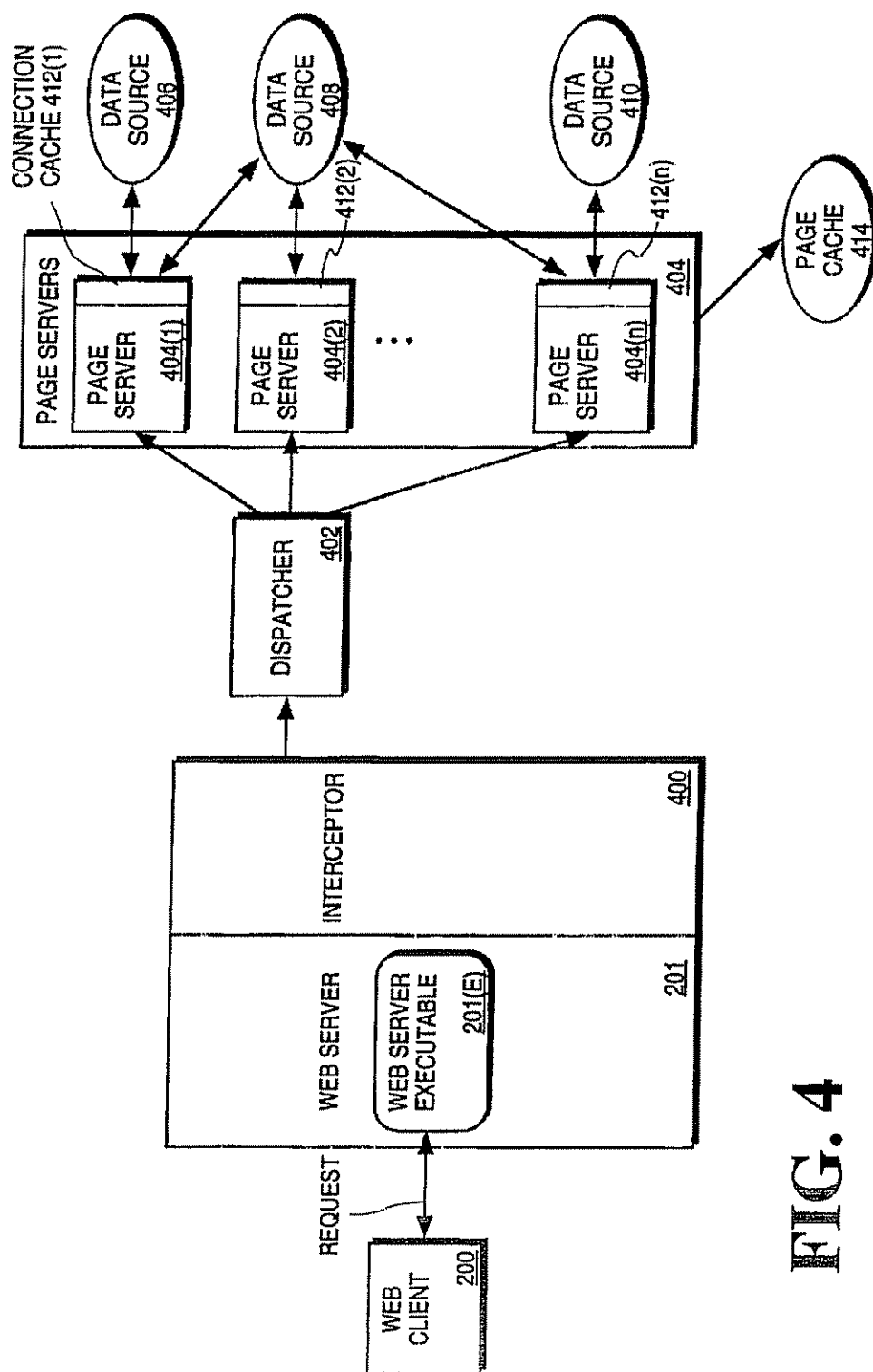


FIG. 4

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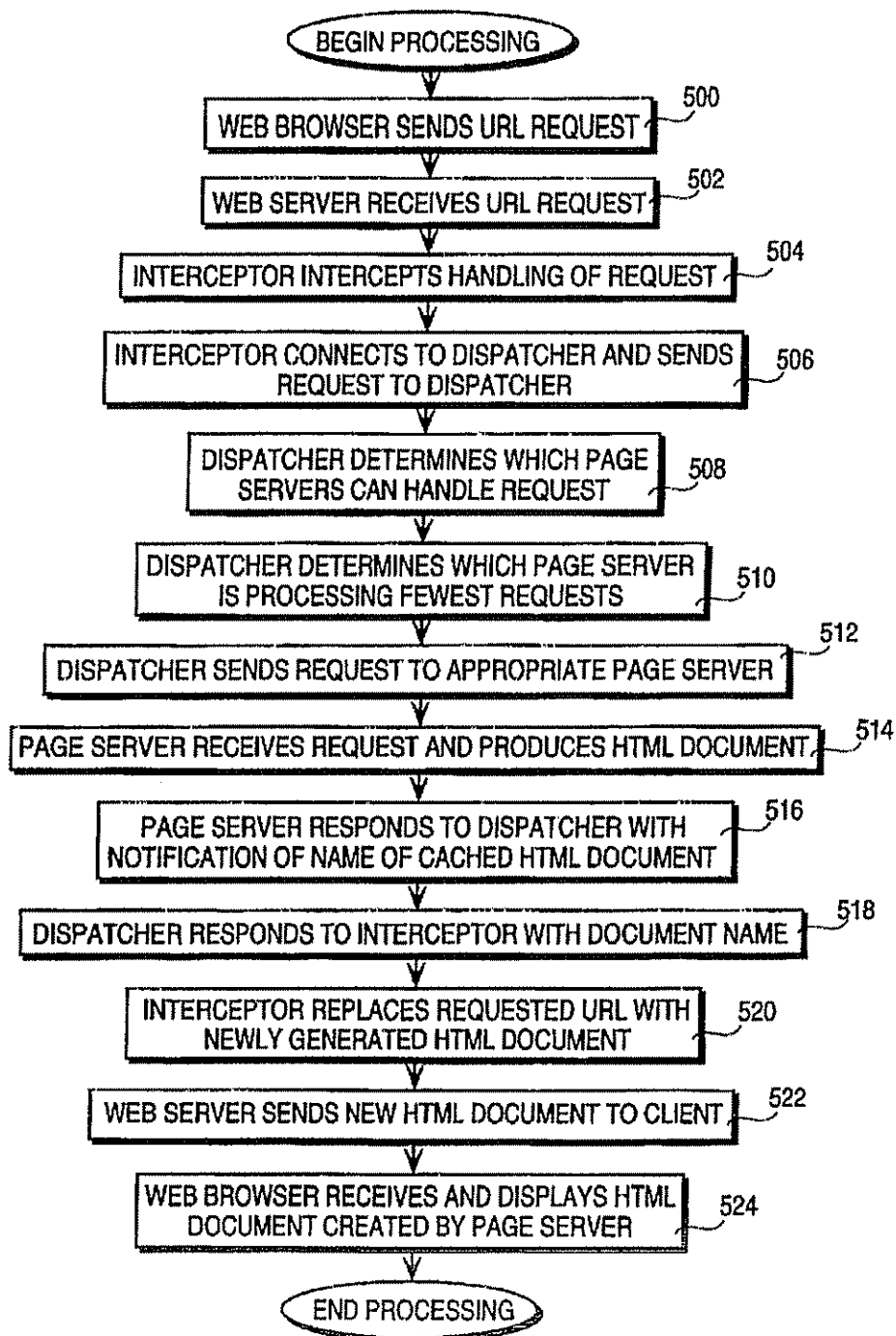


FIG. 5

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**SYSTEM FOR MANAGING DYNAMIC WEB
PAGE GENERATION REQUESTS BY
INTERCEPTING REQUEST AT WEB
SERVER AND ROUTING TO PAGE SERVER
THEREBY RELEASING WEB SERVER TO
PROCESS OTHER REQUESTS**

FIELD OF THE INVENTION

The present invention relates to the field of Internet technology. Specifically, the present invention relates to the creation and management of custom World Wide Web sites

DESCRIPTION OF RELATED ART

The World Wide Web (the Web) represents all of the computers on the Internet that offer users access to information on the Internet via interactive documents or Web pages. These Web pages contain hypertext links that are used to connect any combination of graphics, audio, video and text in a non-linear, non-sequential manner. Hypertext links are created using a special software language known as HyperText Mark-Up Language (HTML).

Once created, Web pages reside on the Web, on Web servers or Web sites. A Web site can contain numerous Web pages. Web client machines running Web browsers can access these Web pages at Web sites via a communications protocol known as HyperText Transport Protocol (HTTP). Web browsers are software interfaces that run on World Wide Web clients to allow access to Web sites via a simple user interface. A Web browser allows a Web client to request a particular Web page from a Web site by specifying a Uniform Resource Locator (URL). A URL is a Web address that identifies the Web page and its location on the Web. When the appropriate Web site receives the URL, the Web page corresponding to the requested URL is located, and if required, HTML output is generated. The HTML output is then sent via HTTP to the client for formatting on the client's screen.

Although Web pages and Web sites are extremely simple to create, the proliferation of Web sites on the Internet highlighted a number of problems. The scope and ability of a Web page designer to change the content of the Web page was limited by the static nature of Web pages. Once created a Web page remained static until it was manually modified. This in turn limited the ability of Web site managers to effectively manage their Web sites.

The Common Gateway Interface (CGI) standard was developed to resolve the problem of allowing dynamic content to be included in Web pages. CGI "calls" or procedures enable applications to generate dynamically created HTML output, thus creating Web pages with dynamic content. Once created, these CGI applications do not have to be modified in order to retrieve "new" or dynamic data. Instead, when the Web page is invoked, CGI "calls" or procedures are used to dynamically retrieve the necessary data and to generate a Web page.

CGI applications also enhanced the ability of Web site administrators to manage Web sites. Administrators no longer have to constantly update static Web pages. A number of vendors have developed tools for CGI based development, to address the issue of dynamic Web page generation. Companies like Spider™ and Bluestone™, for example, have each created development tools for CGI-based Web page development. Another company, Haht Software™, has developed a Web page generation tool that uses a BASIC-like scripting language instead of a CGI scripting language.

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Tools that generate CGI applications do not, however, resolve the problem of managing numerous Web pages and requests at a Web site. For example, a single company may maintain hundreds of Web pages at their Web site. Current Web server architecture also does not allow the Web server to efficiently manage the Web page and process Web client requests. Managing these hundreds of Web pages in a coherent manner and processing all requests for access to the Web pages is thus a difficult task. Existing development tools are limited in their capabilities to facilitate dynamic Web page generation, and do not address the issue of managing Web requests or Web sites.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a method and apparatus for creating and managing custom Web sites. Specifically, the present invention claims a method and apparatus for managing dynamic web page generation requests.

In one embodiment, the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources. Other embodiments also include connection caches to the one or more data sources, page caches for each page server, and custom HTML extension templates for configuring the Web page.

Other objects, features and advantages of the present invention will be apparent from the accompanying drawings and from the detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a typical computer system in which the present invention operates.

FIG. 2 illustrates a typical prior art Web server environment.

FIG. 3 illustrates a typical prior art Web server environment in the form of a flow diagram.

FIG. 4 illustrates one embodiment of the presently claimed invention.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention.

**DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENT**

The present invention relates to a method and apparatus for creating and managing custom Web sites. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent to one of ordinary skill in the art, however, that these specific details need not be used to practice the present invention. In other instances, well-known structures, interfaces and processes have not been shown in detail in order not to unnecessarily obscure the present invention.

FIG. 1 illustrates a typical computer system 100 in which the present invention operates. The preferred embodiment of

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the present invention is implemented on an IBM™ Personal Computer manufactured by IBM Corporation of Armonk, N.Y. An alternate embodiment may be implemented on an RS/6000™ Workstation manufactured by IBM Corporation of Armonk, N.Y. It will be apparent to those of ordinary skill in the art that other computer system architectures may also be employed.

In general, such computer systems as illustrated by FIG 1 comprise a bus 101 for communicating information, a processor 102 coupled with the bus 101 for processing information, main memory 103 coupled with the bus 101 for storing information and instructions for the processor 102, a read-only memory 104 coupled with the bus 101 for storing static information and instructions for the processor 102, a display device 105 coupled with the bus 101 for displaying information for a computer user, an input device 106 coupled with the bus 101 for communicating information and command selections to the processor 102, and a mass storage device 107 such as a magnetic disk and associated disk drive coupled with the bus 101 for storing information and instructions. A data storage medium 108 containing digital information is configured to operate with mass storage device 107 to allow processor 102 access to the digital information on data storage medium 108 via bus 101.

Processor 102 may be any of a wide variety of general purpose processors or microprocessors such as the Pentium™ microprocessor manufactured by Intel™ Corporation or the RS/6000™ processor manufactured by IBM Corporation. It will be apparent to those of ordinary skill in the art, however, that other varieties of processors may also be used in a particular computer system. Display device 105 may be a liquid crystal device, cathode ray tube (CRT), or other suitable display device. Mass storage device 107 may be a conventional hard disk drive, floppy disk drive, CD-ROM drive, or other magnetic or optical data storage device for reading and writing information stored on a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium. Data storage medium 108 may be a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium.

In general, processor 102 retrieves processing instructions and data from a data storage medium 108 using mass storage device 107 and downloads this information into random access memory 103 for execution. Processor 102 then executes an instruction stream from random access memory 103 or read-only memory 104. Command selections and information input at input device 106 are used to direct the flow of instructions executed by processor 102. Equivalent input device 106 may also be a pointing device such as a conventional mouse or trackball device. The results of this processing execution are then displayed on display device 105.

The preferred embodiment of the present invention is implemented as a software module, which may be executed on a computer system such as computer system 100 in a conventional manner. Using well known techniques, the application software of the preferred embodiment is stored on data storage medium 108 and subsequently loaded into and executed within computer system 100. Once initiated, the software of the preferred embodiment operates in the manner described below.

FIG. 2 illustrates a typical prior art Web server environment. Web client 200 can make URL requests to Web server 201 or Web server 202. Web servers 201 and 202 include Web server executables 201(E) and 202(E) respectively.

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that perform the processing of Web client requests. Each Web server may have a number of Web pages 201(1)-(n) and 202(1)-(n). Depending on the URL specified by the Web client 200, the request may be routed by either Web server executable 201(E) to Web page 201(1), for example, or from Web server executable 202(E) to Web page 202(1). Web client 200 can continue making URL requests to retrieve other Web pages. Web client 200 can also use hyperlinks within each Web page to "jump" to other Web pages or to other locations within the same Web page.

FIG. 3 illustrates this prior art Web server environment in the form of a flow diagram. In processing block 300, the Web client makes a URL request. This URL request is examined by the Web browser to determine the appropriate Web server to route the request to in processing block 302. In processing block 304 the request is then transmitted from the Web browser to the appropriate Web server, and in processing block 306 the Web server executable examines the URL to determine whether it is a HTML document or a CGI application. If the request is for an HTML document 308, then the Web server executable locates the document in processing block 310. The document is then transmitted back through the requesting Web browser for formatting and display in processing block 312.

If the URL request is for a CGI application 314, however, the Web server executable locates the CGI application in processing block 316. The CGI application then executes and outputs HTML output in processing block 318 and finally, the HTML output is transmitted back to requesting Web browser for formatting and display in processing block 320.

This prior art Web server environment does not, however, provide any mechanism for managing the Web requests or the Web sites. As Web sites grow and as the number of Web clients and requests increase, Web site management becomes a crucial need.

For example, a large Web site may receive thousands of requests or "hits" in a single day. Current Web servers process each of these requests on a single machine, namely the Web server machine. Although these machines may be running "multi-threaded" operating systems that allow transactions to be processed by independent "threads," all the threads are nevertheless on a single machine sharing a processor. As such, the Web executable thread may hand off a request to a processing thread, but both threads will still have to be handled by the processor on the Web server machine. When numerous requests are being simultaneously processed by multiple threads on a single machine, the Web server can slow down significantly and become highly inefficient. The claimed invention addresses this need by utilizing a partitioned architecture to facilitate the creation and management of custom Web sites and servers.

FIG. 4 illustrates one embodiment of the presently claimed invention. Web client 200 issues a URL request that is processed to determine proper routing. In this embodiment, the request is routed to Web server 201. Instead of Web server executable 201(E) processing the URL request, however, Interceptor 400 intercepts the request and routes it to Dispatcher 402. In one embodiment, Interceptor 400 resides on the Web server machine as an extension to Web server 201. This embodiment is appropriate for Web servers such as Netsite™ from Netscape that support such extensions. A number of public domain Web servers, such as NCSA™ from the National Center for Supercomputing Applications at the University of Illinois Urbana-Champaign, however, do not provide support for

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this type of extension. Thus, in an alternate embodiment, Interceptor 400 is an independent module, connected via an "intermediate program" to Web server 201. This intermediate program can be a simple CGI application program that connects Interceptor 400 to Web server 201. Alternate intermediate programs perform the same functionality and can also be implemented.

In one embodiment of the invention, Dispatcher 402 resides on a different machine than Web server 201. This embodiment overcomes the limitation described above, in prior art Web servers, wherein all processing is performed by the processor on a single machine. By routing the request to Dispatcher 402 residing on a different machine than the Web server executable 201(E), the request can then be processed by a different processor than the Web server executable 201(E). Web server executable 201(E) is thus free to continue servicing client requests on Web server 201 while the request is processed "off-line," at the machine on which Dispatcher 402 resides.

Dispatcher 402 can, however, also reside on the same machine as the Web server. The Web site administrator has the option of configuring Dispatcher 402 on the same machine as Web server 201, taking into account a variety of factors pertinent to a particular Web site, such as the size of the Web site, the number of Web pages and the number of hits at the Web site. Although this embodiment will not enjoy the advantage described above, namely off-loading the processing of Web requests from the Web server machine, the embodiment does allow flexibility for a small Web site to grow. For example, a small Web site administrator can use a single machine for both Dispatcher 402 and Web server 201 initially, then off-load Dispatcher 402 onto a separate machine as the Web site grows. The Web site can thus take advantage of other features of the present invention regardless of whether the site has separate machines configured as Web servers and dispatchers.

Dispatcher 402 receives the intercepted request and then dispatches the request to one of a number of Page servers 404(1)-(n). For example, if Page server 404(1) receives the dispatched request, it processes the request and retrieves the data from an appropriate data source, such as data source 406, data source 408, or data source 410. Data sources, as used in the present application, include databases, spreadsheets, files and any other type of data repository. Page server 404(1) can retrieve data from more than one data source and incorporate the data from these multiple data sources in a single Web page.

In one embodiment, each Page server 404(1)-(n) resides on a separate machine on the network to distribute the processing of the request. Dispatcher 402 maintains a variety of information regarding each Page server on the network, and dispatches requests based on this information. For example, Dispatcher 402 retains dynamic information regarding the data sources that any given Page server can access. Dispatcher 402 thus examines a particular request and determines which Page servers can service the URL request. Dispatcher 402 then hands off the request to the appropriate Page server.

For example, if the URL request requires financial data from data source 408, dispatcher 402 will first examine an information list. Dispatcher 402 may determine that Page server 404(3), for example, has access to the requisite data in data source 408. Dispatcher 402 will thus route the URL request to Page server 404(3). This "connection caching" functionality is described in more detail below, under the heading "Performance."

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Alternately, Dispatcher 402 also has the ability to determine whether a particular Page server already has the necessary data cached in the Page server's page cache (described in more detail below, under the heading "Performance"). Dispatcher 402 may thus determine that Page server 404(1) and 404(2) are both logged into Data source 408, but that Page server 404(2) has the financial information already cached in Page server 404(2)'s page cache. In this case, Dispatcher 402 will route the URL request to Page server 404(2) to more efficiently process the request.

Finally, Dispatcher 402 may determine that a number or all Page servers 404(1)-(n) are logged into Data source 408. In this scenario, Dispatcher 402 can examine the number of requests that each Page server is servicing and route the request to the least busy page server. This "load balancing" capability can significantly increase performance at a busy Web site and is discussed in more detail below, under the heading "Scalability."

If, for example, Page server 404(2) receives the request, Page server 404(2) will process the request. While Page server 404(2) is processing the request, Web server executable 201(E) can concurrently process other Web client requests. This partitioned architecture thus allows both Page server 404(2) and Web server executable 201(E) to simultaneously process different requests, thus increasing the efficiency of the Web site. Page server 404(2) dynamically generates a Web page in response to the Web client request, and the dynamic Web page is then either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201 for later retrieval.

One embodiment of the claimed invention also provides a Web page designer with HTML extensions or "dyna" tags. These dyna tags provide customized HTML functionality to a Web page designer, to allow the designer to build customized HTML templates that specify the source and placement of retrieved data. For example, in one embodiment, a "dynatext" HTML extension tag specifies a data source and a column name to allow the HTML template to identify the data source to log into and the column name from which to retrieve data. Alternatively, "dyna-anchor" tags allow the designer to build hyperlink queries while "dynablock" tags provide the designer with the ability to iterate through blocks of data. Page servers use these HTML templates to create dynamic Web pages. Then, as described above, these dynamic Web pages are either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201 for later retrieval.

The presently claimed invention provides numerous advantages over prior art Web servers, including advantages in the areas of performance, security, extensibility, and scalability.

Performance

One embodiment of the claimed invention utilizes connection caching and page caching to improve performance. Each Page server can be configured to maintain a cache of connections to numerous data sources. For example, as illustrated in FIG. 4, Page server 404(1) can retrieve data from data source 406, data source 408, or data source 410. Page server 404(1) can maintain connection cache 412(1) containing connections to each of data source 406, data source 408, and data source 410, thus eliminating connection times from the Page servers to those data sources.

Additionally, another embodiment of the present invention supports the caching of finished Web pages, to optimize

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the performance of the data source being utilized. This "page caching" feature, illustrated in FIG. 4 as Page cache 414, allows the Web site administrator to optimize the performance of data sources by caching Web pages that are repeatedly accessed. Once the Web page is cached, subsequent requests or "hits" will utilize the cached Web page rather than re-accessing the data source. This can radically improve the performance of the data source.

Security

The present invention allows the Web site administrator to utilize multiple levels of security to manage the Web site. In one embodiment, the Page server can utilize all standard encryption and site security features provided by the Web server. In another embodiment, the Page server can be configured to bypass connection caches 412(1)-(n) described above, for a particular data source and to require entry of a user-supplied identification and password for the particular data source the user is trying to access.

Additionally, another embodiment of the presently claimed invention requires no real-time access of data sources. The Web page caching ability, described above, enables additional security for those sites that want to publish non-interactive content from internal information systems, but do not want real-time Internet accessibility to those internal information systems. In this instance, the Page server can act as a "replication and staging agent" and create Web pages in batches, rather than in real-time. These "replicated" Web pages are then "staged" for access at a later time, and access to the Web pages in this scenario is possible even if the Page server and dispatcher are not present later.

In yet another embodiment, the Page server can make a single pass through a Web library, and compile a Web site that exists in the traditional form of separately available files. A Web library is a collection of related Web books and Web pages. More specifically, the Web library is a hierarchical organization of Web document templates, together with all the associated data source information. Information about an entire Web site is thus contained in a single physical file, thus simplifying the problem of deploying Web sites across multiple Page servers. The process of deploying the Web site in this embodiment is essentially a simple copy of a single file.

Extensibility

One embodiment of the present invention provides the Web site administrator with Object Linking and Embedding (OLE) 2.0 extensions to extend the page creation process. These OLE 2.0 extensions also allow information submitted over the Web to be processed with user-supplied functionality. Utilizing development tools such as Visual Basic, Visual C++ or PowerBuilder that support the creation of OLE 2.0 automation, the Web site administrator can add features and modify the behavior of the Page servers described above. This extensibility allows one embodiment of the claimed invention to be incorporated with existing technology to develop an infinite number of custom web servers.

For example, OLE 2.0 extensions allow a Web site administrator to encapsulate existing business rules in an OLE 2.0 automation interface, to be accessed over the Web. One example of a business rule is the steps involved in the payoff on an installment or mortgage loan. The payoff may involve, for example, taking into account the current balance, the date and the interest accrued since the last payment. Most organizations already have this type of

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business rule implemented using various applications, such as Visual Basic for client-server environments, or CICS programs on mainframes. If these applications are OLE 2.0 compliant, the Page server "dynaobject" HTML extension tag can be used to encapsulate the application in an OLE 2.0 automation interface. The Page server is thus extensible, and can incorporate the existing application with the new Page server functionality.

Scalability

One embodiment of the claimed invention allows "plug and play" scalability. As described above, referring to FIG. 4, Dispatcher 402 maintains information about all the Page servers configured to be serviced by Dispatcher 402. Any number of Page servers can thus be "plugged" into the configuration illustrated in FIG. 4, and the Page servers will be instantly activated as the information is dynamically updated in Dispatcher 402. The Web site administrator can thus manage the overhead of each Page server and modify each Page server's load, as necessary, to improve performance. In this manner, each Page server will cooperate with other Page servers within a multi-server environment. Dispatcher 402 can examine the load on each Page server and route new requests according to each Page server's available resources. This "load-balancing" across multiple Page servers can significantly increase a Web site's performance.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention. A Web browser sends a URL request to a Web server in processing block 500. In processing block 502, the Web server receives the URL request, and an interceptor then intercepts the handling of the request in processing block 504. The interceptor connects to a dispatcher and sends the URL request to the dispatcher in processing block 506. In processing block 508, the dispatcher determines which Page servers can handle the request. The dispatcher also determines which Page server is processing the fewest requests in processing block 510, and in processing block 512, the dispatcher sends the URL request to an appropriate Page server. The Page server receives the request and produces an HTML document in processing block 514. The Page server then responds to the dispatcher with notification of the name of the cached HTML document in processing block 516. In processing block 518, the dispatcher responds to the interceptor with the document name, and the interceptor then replaces the requested URL with the newly generated HTML document in processing block 520. The Web server then sends the new HTML document to the requesting client in processing block 522. Finally, the Web browser receives and displays the HTML document created by the Page server at processing block 524.

Thus, a method and apparatus for creating and managing custom Web sites is disclosed. These specific arrangements and methods described herein are merely illustrative of the principles of the present invention. Numerous modifications in form and detail may be made by those of ordinary skill in the art without departing from the scope of the present invention. Although this invention has been shown in relation to a particular preferred embodiment, it should not be considered so limited. Rather, the present invention is limited only by the scope of the appended claims.

We claim:

1. A computer-implemented method for managing a dynamic Web page generation request to a Web server, said computer-implemented method comprising the steps of:
 routing said request from said Web server to a page server
 said page server receiving said request and releasing

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said Web server to process other requests, wherein said routing step further includes the steps of intercepting said request at said Web server, routing said request from said Web server to a dispatcher, and dispatching said request to said page server;

processing said request, said processing being performed by said page server while said Web server concurrently processes said other requests; and

dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from one or more data sources

2 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data

3 The computer-implemented method in claim 2 wherein said step of dynamically generating said Web page includes the step of dynamically retrieving said data from said one or more data sources.

4 The computer-implemented method in claim 3 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources

5 The computer-implemented method in claim 3 wherein said step of processing said request includes the step of logging into said one or more data sources

6 The computer-implemented method in claim 3 wherein said step of dynamically generating said Web page includes the step of maintaining a page cache containing said Web page.

7 The computer-implemented method in claim 3 wherein said page server includes custom HTML extension templates for configuring said Web page

8 The computer-implemented method in claim 7 wherein said step of processing said request further includes the step of inserting said dynamically retrieved data from said one or more data sources into said custom HTML extension templates

9 A networked system for managing a dynamic Web page generation request, said system comprising:

one or more data sources;

a page server having a processing means;

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a first computer system including means for generating said request; and

a second computer system including means for receiving said request from said first computer, said second computer system also including a router, said router routing said request from said second computer system to said page server, wherein said routing further includes intercepting said request at said second computer, routing said request from said second computer to a dispatcher, and dispatching said request to said page server said page server receiving said request and releasing said second computer system to process other requests, said page server processing means processing said request and dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from said one or more data sources.

10 The networked system in claim 9 wherein said router in said second computer system includes:

an interceptor intercepting said request at said second computer system and routing said request; and

a dispatcher receiving said routed request from said interceptor and dispatching said request to said page server.

11 A machine readable medium having stored thereon data representing sequences of instructions which when executed by a computer system, cause said computer system to perform the steps of:

routing a dynamic Web page generation request from a Web server to a page server, said page server receiving said request and releasing said Web server to process other requests wherein said routing step further includes the steps of intercepting said request at said Web server routing said request from said Web server to a dispatcher, and dispatching said request to said page server;

processing said request, said processing being performed by said page server while said Web server concurrently processes said other requests; and

dynamically generating a Web page said Web page including data retrieved from one or more data sources.

* * * * *



US006415335B1

(12) **United States Patent**
Lowery et al.

(10) Patent No.: **US 6,415,335 B1**
(45) Date of Patent: ***Jul. 2, 2002**

(54) **SYSTEM AND METHOD FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS**

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(73) Assignee: epicRealm Operating Inc., Richardson, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days

This patent is subject to a terminal disclaimer

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(51) Int. Cl.⁷ G06F 13/14; G06F 13/20

(52) U.S. Cl. 710/5; 710/7; 709/219; 709/223; 709/238

(58) Field of Search 709/238, 223, 709/219; 710/5, 7, 20-21

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Primary Examiner—Jeffrey Gaffin

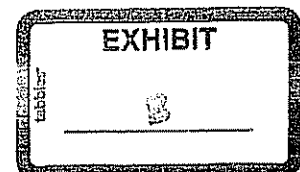
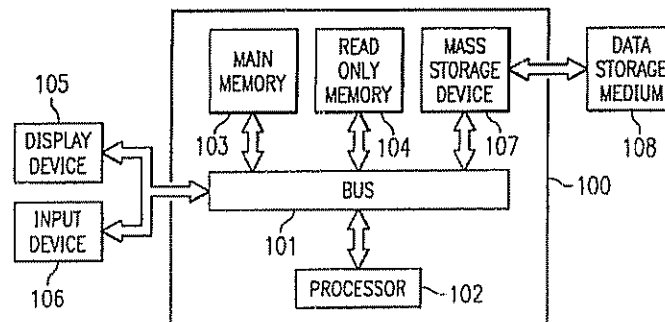
Assistant Examiner—Rehana Perveen

(74) Attorney, Agent, or Firm—Baker Botts L.L.P.

(57) ABSTRACT

The present invention teaches a method and apparatus for creating and managing custom Web sites. Specifically, one embodiment of the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources

29 Claims, 4 Drawing Sheets



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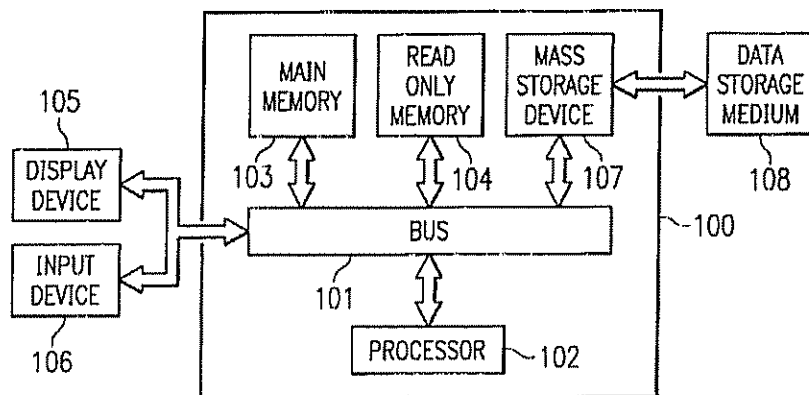
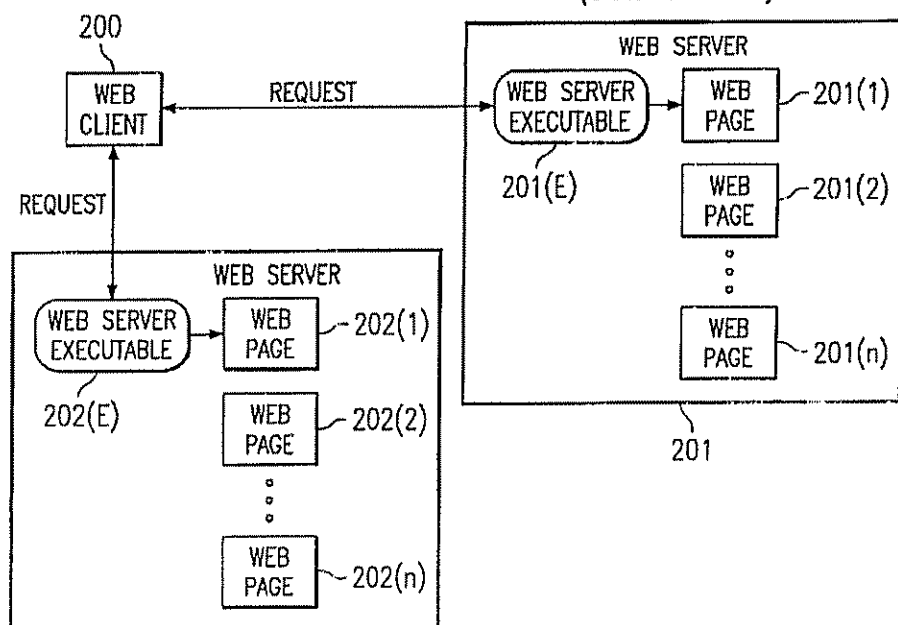
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FIG. 1

FIG. 2
(PRIOR ART)

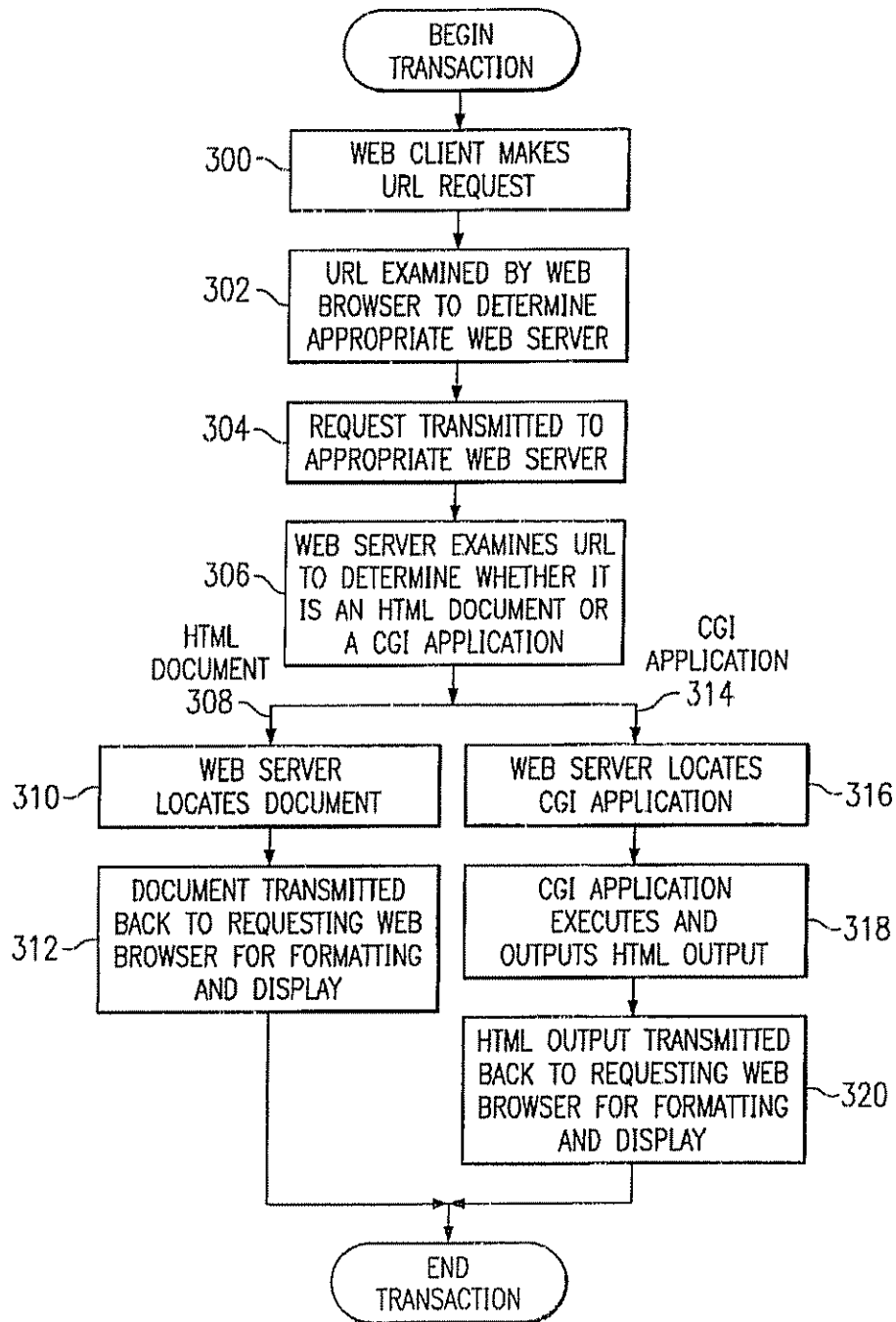
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FIG. 3
(PRIOR ART)

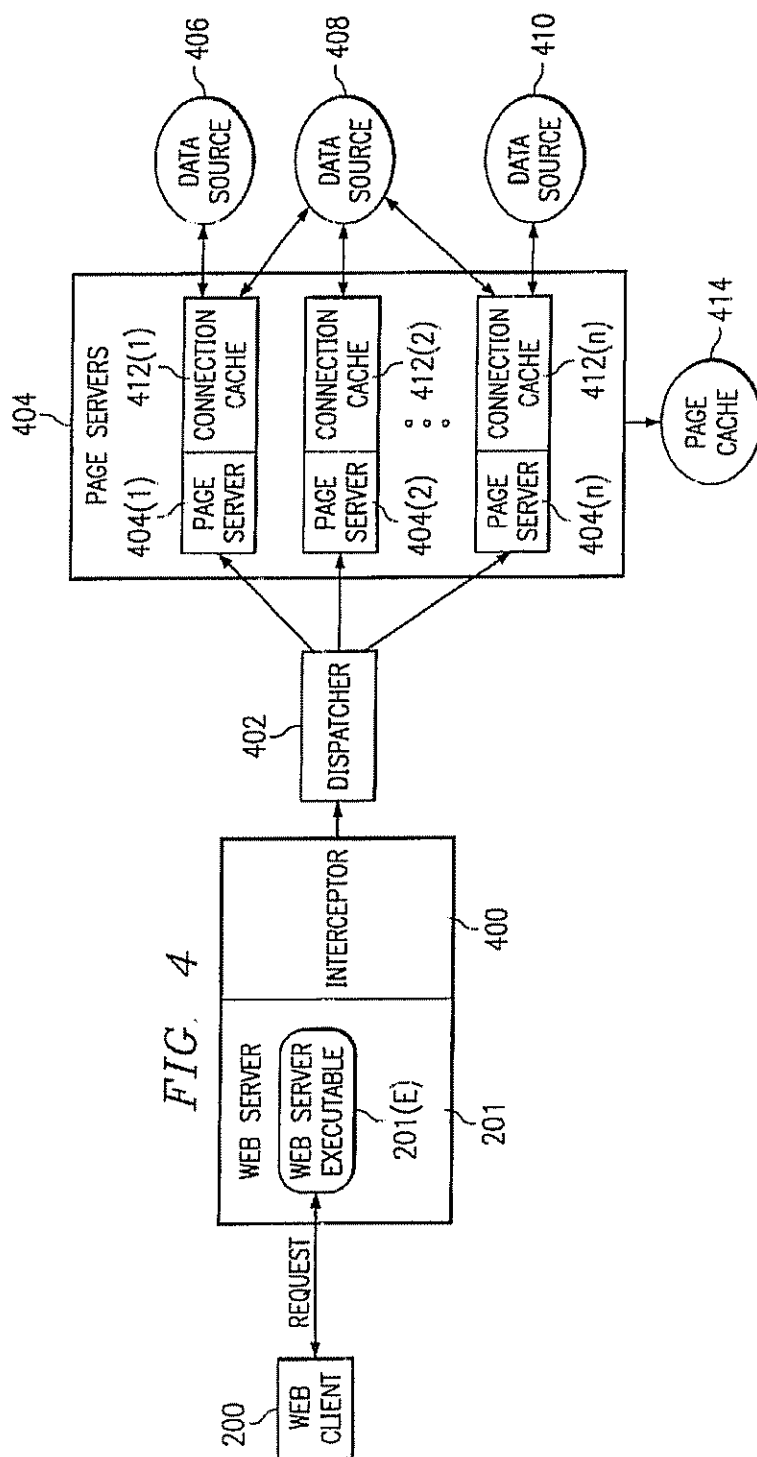


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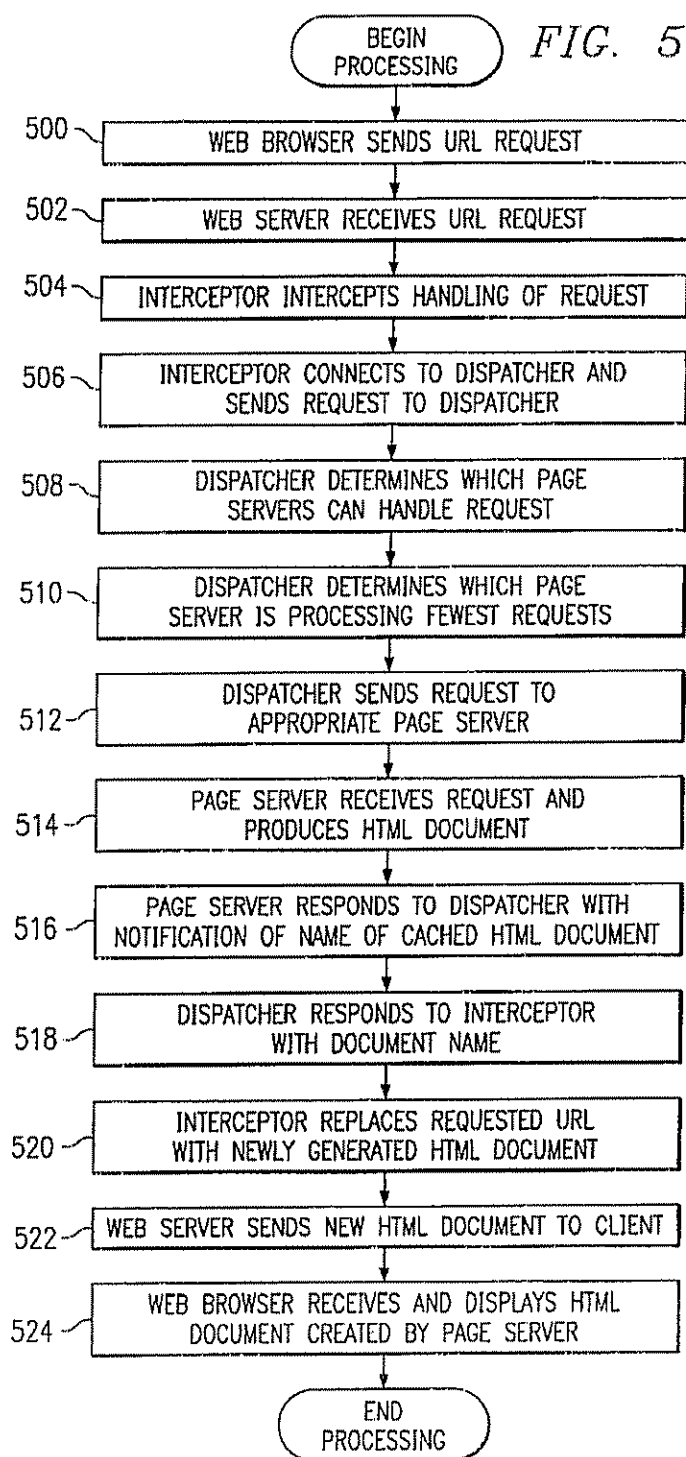


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SYSTEM AND METHOD FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS

This application is a division of Ser No 08/636,477, 5
filed Apr 23, 1996, now US Pat No 5,894,554

FIELD OF THE INVENTION

The present invention relates to the field of Internet 10
technology. Specifically, the present invention relates to the
creation and management of custom World Wide Web sites

DESCRIPTION OF RELATED ART

The World Wide Web (the Web) represents all of the 15
computers on the Internet that offer users access to infor-
mation on the Internet via interactive documents or Web
pages. These Web pages contain hypertext links that are used
to connect any combination of graphics, audio, video and
text, in a non-linear, non-sequential manner. Hypertext links
are created using a special software language known as
HyperText Mark-Up Language (HTML).

Once created, Web pages reside on the Web, on Web 20
servers or Web sites. A Web site can contain numerous Web
pages. Web client machines running Web browsers can
access these Web pages at Web sites via a communications
protocol known as HyperText Transport Protocol (HTTP). 25
Web browsers are software interfaces that run on World
Wide Web clients to allow access to Web sites via a simple
user interface. A Web browser allows a Web client to request
a particular Web page from a Web site by specifying a
Uniform Resource Locator (URL). A URL is a Web address 30
that identifies the Web page and its location on the Web.
When the appropriate Web site receives the URL, the Web
page corresponding to the requested URL is located, and if
required, HTML output is generated. The HTML output is
then sent via HTTP to the client for formatting on the client's 35
screen.

Although Web pages and Web sites are extremely simple 40
to create, the proliferation of Web sites on the Internet
highlighted a number of problems. The scope and ability of
a Web page designer to change the content of the Web page
was limited by the static nature of Web pages. Once created,
a Web page remained static until it was manually modified.
This in turn limited the ability of Web site managers to
effectively manage their Web sites.

The Common Gateway Interface (CGI) standard was 45
developed to resolve the problem of allowing dynamic
content to be included in Web pages. CGI "calls" or proce-
dures enable applications to generate dynamically created
HTML output, thus creating Web pages with dynamic con- 50
tent. Once created, these CGI applications do not have to be
modified in order to retrieve "new" or dynamic data. Instead,
when the Web page is invoked, CGI "calls" or procedures
are used to dynamically retrieve the necessary data and to 55
generate a Web page.

CGI applications also enhanced the ability of Web site 60
administrators to manage Web sites. Administrators no
longer have to constantly update static Web pages. A number
of vendors have developed tools for CGI based develop-
ment, to address the issue of dynamic Web page
generation. Companies like Spider™ and Bluestone™, for
example, have each created development tools for CGI-
based Web page development. Another company, Haht 65
Software™, has developed a Web page generation tool that
uses a BASIC-like scripting language, instead of a CGI
scripting language.

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Tools that generate CGI applications do not, however,
resolve the problem of managing numerous Web pages and
requests at a Web site. For example, a single company may
maintain hundreds of Web pages at their Web site. Current
Web server architecture also does not allow the Web server
to efficiently manage the Web page and process Web client
requests. Managing these hundreds of Web pages in a
coherent manner and processing all requests for access to the
Web pages is thus a difficult task. Existing development
tools are limited in their capabilities to facilitate dynamic
Web page generation, and do not address the issue of
managing Web requests or Web sites.

SUMMARY OF THE INVENTION

15 It is therefore an object of the present invention to provide
a method and apparatus for creating and managing custom
Web sites. Specifically, the present invention claims a
method and apparatus for managing dynamic web page
generation requests.

20 In one embodiment, the present invention claims a
computer-implemented method for managing a dynamic
Web page generation request to a Web server, the computer-
implemented method comprising the steps of routing the
request from the Web server to a page server, the page server 25
receiving the request and releasing the Web server to process
other requests, processing the request, the processing being
performed by the page server concurrently with the Web
server, as the Web server processes the other requests, and
dynamically generating a Web page in response to the 30
request, the Web page including data dynamically retrieved
from one or more data sources. Other embodiments also
include connection caches to the one or more data sources,
page caches for each page server, and custom HTML
extension templates for configuring the Web page.

35 Other objects, features and advantages of the present
invention will be apparent from the accompanying drawings
and from the detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a typical computer system in which the 40
present invention operates.

FIG. 2 illustrates a typical prior art Web server environ-
ment.

45 FIG. 3 illustrates a typical prior art Web server environ-
ment in the form of a flow diagram.

FIG. 4 illustrates one embodiment of the presently
claimed invention.

FIG. 5 illustrates the processing of a Web browser request 50
in the form of a flow diagram, according to one embodiment
of the presently claimed invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to a method and apparatus
for creating and managing custom Web sites. In the follow-
ing detailed description, numerous specific details are set
forth in order to provide a thorough understanding of the
present invention. It will be apparent to one of ordinary skill
in the art, however, that these specific details need not be
used to practice the present invention. In other instances,
well-known structures, interfaces and processes have not
been shown in detail in order not to unnecessarily obscure
the present invention.

FIG. 1 illustrates a typical computer system 100 in which
the present invention operates. The preferred embodiment of

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the present invention is implemented on an IBM™ Personal Computer manufactured by IBM Corporation of Armonk, New York. An alternate embodiment may be implemented on an RS/6000™ Workstation manufactured by IBM Corporation of Armonk, New York. It will be apparent to those of ordinary skill in the art that other computer system architectures may also be employed.

In general, such computer systems as illustrated by FIG 1 comprise a bus 101 for communicating information, a processor 102 coupled with the bus 101 for processing information, main memory 103 coupled with the bus 101 for storing information and instructions for the processor 102, a read-only memory 104 coupled with the bus 101 for storing static information and instructions for the processor 102, a display device 105 coupled with the bus 101 for displaying information for a computer user, an input device 106 coupled with the bus 101 for communicating information and command selections to the processor 102, and a mass storage device 107, such as a magnetic disk and associated disk drive, coupled with the bus 101 for storing information and instructions. A data storage medium 108 containing digital information is configured to operate with mass storage device 107 to allow processor 102 access to the digital information on data storage medium 108 via bus 101.

Processor 102 may be any of a wide variety of general purpose processors or microprocessors such as the Pentium™ microprocessor manufactured by Intel™ Corporation or the RS/6000™ processor manufactured by IBM Corporation. It will be apparent to those of ordinary skill in the art, however, that other varieties of processors may also be used in a particular computer system. Display device 105 may be a liquid crystal device, cathode ray tube (CRT), or other suitable display device. Mass storage device 107 may be a conventional hard disk drive, floppy disk drive, CD-ROM drive, or other magnetic or optical data storage device for reading and writing information stored on a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium. Data storage medium 108 may be a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium.

In general, processor 102 retrieves processing instructions and data from a data storage medium 108 using mass storage device 107 and downloads this information into random access memory 103 for execution. Processor 102, then executes an instruction stream from random access memory 103 or read-only memory 104. Command selections and information input at input device 106 are used to direct the flow of instructions executed by processor 102. Equivalent input device 106 may also be a pointing device such as a conventional mouse or trackball device. The results of this processing execution are then displayed on display device 105.

The preferred embodiment of the present invention is implemented as a software module, which may be executed on a computer system such as computer system 100 in a conventional manner. Using well known techniques, the application software of the preferred embodiment is stored on data storage medium 108 and subsequently loaded into and executed within computer system 100. Once initiated, the software of the preferred embodiment operates in the manner described below.

FIG 2 illustrates a typical prior art Web server environment. Web client 200 can make URL requests to Web server 201 or Web server 202. Web servers 201 and 202 include Web server executables, 201(E) and 202(E) respectively,

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that perform the processing of Web client requests. Each Web server may have a number of Web pages 201(1)-(n) and 202(1)-(n). Depending on the URL specified by the Web client 200, the request may be routed by either Web server executable 201(E) to Web page 201 (1), for example, or from Web server executable 202(E) to Web page 202 (1). Web client 200 can continue making URL requests to retrieve other Web pages. Web client 200 can also use hyperlinks within each Web page to "jump" to other Web pages or to other locations within the same Web page.

FIG 3 illustrates this prior art Web server environment in the form of a flow diagram. In processing block 300, the Web client makes a URL request. This URL request is examined by the Web browser to determine the appropriate Web server to route the request to in processing block 302. In processing block 304 the request is then transmitted from the Web browser to the appropriate Web server, and in processing block 306 the Web server executable examines the URL to determine whether it is a HTML document or a CGI application. If the request is for an HTML document 308, then the Web server executable locates the document in processing block 310. The document is then transmitted back through the requesting Web browser for formatting and display in processing block 312.

If the URL request is for a CGI application 314, however, the Web server executable locates the CGI application in processing block 316. The CGI application then executes and outputs HTML output in processing block 318 and finally, the HTML output is transmitted back to requesting Web browser for formatting and display in processing block 320.

This prior art Web server environment does not, however, provide any mechanism for managing the Web requests or the Web sites. As Web sites grow, and as the number of Web clients and requests increase, Web site management becomes a crucial need.

For example, a large Web site may receive thousands of requests or "hits" in a single day. Current Web servers process each of these requests on a single machine, namely the Web server machine. Although these machines may be running "multi-threaded" operating systems that allow transactions to be processed by independent "threads," all the threads are nevertheless on a single machine, sharing a processor. As such, the Web executable thread may hand off a request to a processing thread, but both threads will still have to be handled by the processor on the Web server machine. When numerous requests are being simultaneously processed by multiple threads on a single machine, the Web server can slow down significantly and become highly inefficient. The claimed invention addresses this need by utilizing a partitioned architecture to facilitate the creation and management of custom Web sites and servers.

FIG 4 illustrates one embodiment of the presently claimed invention. Web client 200 issues a URL request that is processed to determine proper routing. In this embodiment, the request is routed to Web server 201. Instead of Web server executable 201(E) processing the URL request, however, Interceptor 400 intercepts the request and routes it to Dispatcher 402. In one embodiment, Interceptor 400 resides on the Web server machine as an extension to Web server 201. This embodiment is appropriate for Web servers such as Netsite™ from Netscape, that support such extensions. A number of public domain Web servers, such as NCSA™ from the National Center for Supercomputing Applications at the University of Illinois, Urbana-Champaign, however, do not provide support for

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this type of extension. Thus, in an alternate embodiment, Interceptor 400 is an independent module, connected via an "intermediate program" to Web server 201. This intermediate program can be a simple CGI application program that connects Interceptor 400 to Web server 201. Alternate intermediate programs that perform the same functionality can also be implemented.

In one embodiment of the invention, Dispatcher 402 resides on a different machine than Web server 201. This embodiment overcomes the limitation described above, in prior art Web servers, wherein all processing is performed by the processor on a single machine. By routing the request to Dispatcher 402 residing on a different machine than the Web server executable 201(E), the request can then be processed by a different processor than the Web server executable 201(E). Web server executable 201(E) is thus free to continue servicing client requests on Web server 201 while the request is processed "off-line," at the machine on which Dispatcher 402 resides.

Dispatcher 402 can, however, also reside on the same machine as the Web server. The Web site administrator has the option of configuring Dispatcher 402 on the same machine as Web server 201, taking into account a variety of factors pertinent to a particular Web site, such as the size of the Web site, the number of Web pages and the number of hits at the Web site. Although this embodiment will not enjoy the advantage described above, namely off-loading the processing of Web requests from the Web server machine, the embodiment does allow flexibility for a small Web site to grow. For example, a small Web site administrator can use a single machine for both Dispatcher 402 and Web server 201 initially, then off-load Dispatcher 402 onto a separate machine as the Web site grows. The Web site can thus take advantage of other features of the present invention regardless of whether the site has separate machines configured as Web servers and dispatchers.

Dispatcher 402 receives the intercepted request and then dispatches the request to one of a number of Page servers 404(1)-(n). For example, if Page server 404(1) receives the dispatched request, it processes the request and retrieves the data from an appropriate data source, such as data source 406, data source 408, or data source 410. Data sources, as used in the present application, include databases, spreadsheets, files and any other type of data repository. Page server 404(1) can retrieve data from more than one data source and incorporate the data from these multiple data sources in a single Web page.

In one embodiment, each Page server 404(1)-(n) resides on a separate machine on the network to distribute the processing of the request. Dispatcher 402 maintains a variety of information regarding each Page server on the network, and dispatches requests based on this information. For example, Dispatcher 402 retains dynamic information regarding the data sources that any given Page server can access. Dispatcher 402 thus examines a particular request and determines which Page servers can service the URL request. Dispatcher 402 then hands off the request to the appropriate Page server.

For example, if the URL request requires financial data from data source 408, dispatcher 402 will first examine an information list. Dispatcher 402 may determine that Page server 404(3), for example, has access to the requisite data in data source 408. Dispatcher 402 will thus route the URL request to Page server 404(3). This "connection caching" functionality is described in more detail below under the heading "Performance." Alternately, Dispatcher 402 also

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has the ability to determine whether a particular Page server already has the necessary data cached in the Page server's page cache (described in more detail below, under the heading "Performance"). Dispatcher 402 may thus determine that Page server 404(1) and 404(2) are both logged into Data source 408, but that Page server 404(2) has the financial information already cached in Page server 404(2)'s page cache. In this case, Dispatcher 402 will route the URL request to Page server 404(2) to more efficiently process the request.

Finally, Dispatcher 402 may determine that a number or all Page servers 404(1)-(n) are logged into Data source 408. In this scenario, Dispatcher 402 can examine the number of requests that each Page server is servicing and route the request to the least busy page server. This "load balancing" capability can significantly increase performance at a busy Web site and is discussed in more detail below, under the heading "Scalability."

If, for example, Page server 404(2), receives the request, Page server 404(2) will process the request. While Page server 404(2) is processing the request, Web server executable 201(E) can concurrently process other Web client requests. This partitioned architecture thus allows both Page server 404(2) and Web server executable 201(E) to simultaneously process different requests, thus increasing the efficiency of the Web site. Page server 404(2) dynamically generates a Web page in response to the Web client request, and the dynamic Web page is then either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201, for later retrieval.

One embodiment of the claimed invention also provides a Web page designer with HTML extensions, or "dyna" tags. These dyna tags provide customized HTML functionality to a Web page designer, to allow the designer to build customized HTML templates that specify the source and placement of retrieved data. For example, in one embodiment, a "dynatext" HTML extension tag specifies a data source and a column name to allow the HTML template to identify the data source to log into and the column name from which to retrieve data. Alternatively, "dyna-anchor" tags allow the designer to build hyperlink queries while "dynablock" tags provide the designer with the ability to iterate through blocks of data. Page servers use these HTML templates to create dynamic Web pages. Then, as described above, these dynamic Web pages are either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201, for later retrieval.

The presently claimed invention provides numerous advantages over prior art Web servers, including advantages in the areas of performance, security, extensibility and scalability.

Performance

One embodiment of the claimed invention utilizes connection caching and page caching to improve performance. Each Page server can be configured to maintain a cache of connections to numerous data sources. For example, as illustrated in FIG. 4, Page server 404(1) can retrieve data from data source 406, data source 408 or data source 410. Page server 404(1) can maintain connection cache 412(1), containing connections to each of data source 406, data source 408 and data source 410, thus eliminating connection times from the Page servers to those data sources.

Additionally another embodiment of the present invention supports the caching of finished Web pages, to optimize the performance of the data source being utilized. This "page

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caching" feature, illustrated in FIG. 4 as Page cache 414, allows the Web site administrator to optimize the performance of data sources by caching Web pages that are repeatedly accessed. Once the Web page is cached, subsequent requests or "hits" will utilize the cached Web page rather than re-accessing the data source. This can radically improve the performance of the data source.

Security

The present invention allows the Web site administrator to utilize multiple levels of security to manage the Web site. In one embodiment, the Page server can utilize all standard encryption and site security features provided by the Web server. In another embodiment, the Page server can be configured to bypass connection caches 412(1)-(n), described above, for a particular data source and to require entry of a user-supplied identification and password for the particular data source the user is trying to access.

Additionally, another embodiment of the presently claimed invention requires no real-time access of data sources. The Web page caching ability, described above, enables additional security for those sites that want to publish non-interactive content from internal information systems, but do not want real-time Internet accessibility to those internal information systems. In this instance, the Page server can act as a "replication and staging agent" and create Web pages in batches, rather than in real-time. These "replicated" Web pages are then "staged" for access at a later time, and access to the Web pages in this scenario is possible even if the Page server and dispatcher are not present later.

In yet another embodiment, the Page server can make a single pass through a Web library, and compile a Web site that exists in the traditional form of separately available files. A Web library is a collection of related Web books and Web pages. More specifically, the Web library is a hierarchical organization of Web document templates, together with all the associated data source information. Information about an entire Web site is thus contained in a single physical file, thus simplifying the problem of deploying Web sites across multiple Page servers. The process of deploying the Web site in this embodiment is essentially a simple copy of a single file.

Extensibility

One embodiment of the present invention provides the Web site administrator with Object Linking and Embedding (OLE) 2.0 extensions to extend the page creation process. These OLE 2.0 extensions also allow information submitted over the Web to be processed with user-supplied functionality. Utilizing development tools such as Visual Basic, Visual C++ or PowerBuilder that support the creation of OLE 2.0 automation, the Web site administrator can add features and modify the behavior of the Page servers described above. This extensibility allows one embodiment of the claimed invention to be incorporated with existing technology to develop an infinite number of custom web servers.

For example, OLE 2.0 extensions allow a Web site administrator to encapsulate existing business rules in an OLE 2.0 automation interface, to be accessed over the Web. One example of a business rule is the steps involved in the payoff on an installment or mortgage loan. The payoff may involve, for example, taking into account the current balance, the date and the interest accrued since the last payment. Most organizations already have this type of business rule implemented using various applications, such

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as Visual Basic for client-server environments, or CICS programs on mainframes. If these applications are OLE 2.0 compliant, the Page server "dynaobject" HTML extension tag can be used to encapsulate the application in an OLE 2.0 automation interface. The Page server is thus extensible, and can incorporate the existing application with the new Page server functionality.

Scalability

One embodiment of the claimed invention allows "plug and play" scalability. As described above, referring to FIG. 4, Dispatcher 402 maintains information about all the Page servers configured to be serviced by Dispatcher 402. Any number of Page servers can thus be "plugged" into the configuration illustrated in FIG. 4, and the Page servers will be instantly activated as the information is dynamically updated in Dispatcher 402. The Web site administrator can thus manage the overhead of each Page server and modify each Page server's load, as necessary, to improve performance. In this manner, each Page server will cooperate with other Page servers within a multi-server environment. Dispatcher 402 can examine the load on each Page server and route new requests according to each Page server's available resources. This "load-balancing" across multiple Page servers can significantly increase a Web site's performance.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention. A Web browser sends a URL request to a Web server in processing block 500. In processing block 502, the Web server receives the URL request, and an interceptor then intercepts the handling of the request in processing block 504. The interceptor connects to a dispatcher and sends the URL request to the dispatcher in processing block 506. In processing block 508, the dispatcher determines which Page servers can handle the request. The dispatcher also determines which Page server is processing the fewest requests in processing block 510, and in processing block 512, the dispatcher sends the URL request to an appropriate Page server. The Page server receives the request and produces an HTML document in processing block 514. The Page server then responds to the dispatcher with notification of the name of the cached HTML document in processing block 516. In processing block 518, the dispatcher responds to the interceptor with the document name, and the interceptor then replaces the requested URL with the newly generated HTML document in processing block 520. The Web server then sends the new HTML document to the requesting client in processing block 522. Finally, the Web browser receives and displays the HTML document created by the Page server at processing block 524.

Thus, a method and apparatus for creating and managing custom Web sites is disclosed. These specific arrangements and methods described herein are merely illustrative of the principles of the present invention. Numerous modifications in form and detail may be made by those of ordinary skill in the art without departing from the scope of the present invention. Although this invention has been shown in relation to a particular preferred embodiment, it should not be considered so limited. Rather, the present invention is limited only by the scope of the appended claims.

We claim:

1. A computer-implemented method for managing a dynamic Web page generation request to a Web server, said computer-implemented method comprising the steps of:

routing a request from a Web server to a page server, said page server receiving said request and releasing said

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Web server to process other requests wherein said routing step further includes the steps of:
 intercepting said request at said Web server and routing said request to said page server;
 processing said request, said processing being performed by said page server while said Web server concurrently processes said other requests; and
 dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from one or more data sources

2 The computer-implemented method in claim 1 wherein said step of routing said request includes the steps of:

routing said request from said Web server to a dispatcher; and

dispatching said request to said page server.

3 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data

4 The computer-implemented method in claim 1 wherein said step of dynamically generating said Web page includes the step of dynamically retrieving said data from said one or more data sources

5 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources

6 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of logging into said one or more data sources

7 The computer-implemented method in claim 1 wherein said step of dynamically generating said Web page includes the step of maintaining a page cache containing said Web page

8 The computer-implemented method in claim 1 wherein said page server includes tag-based text templates for configuring said Web page.

9 The computer-implemented method in claim 8 wherein said step of processing said request further includes the step of inserting said-dynamically retrieved data from said one or more data sources into said tag-based text templates

10 The computer-implemented method in claim 8 wherein at least one of said tag-based text templates drives a format of the data dynamically retrieved from said one or more data sources in response to said request

11 The computer-implemented method in claim 8 wherein said tag-based text templates include HTML templates

12 The computer-implemented method in claim 1 wherein said step of processing said request further includes the step of dynamically updating data at said one or more data sources

13 The computer-implemented method in claim 1 wherein said step of processing said request further includes the step of processing an object handling extension

14 The computer-implemented method in claim 13 wherein said object handling extension is an OLE extension

15 A computer-implemented method comprising the steps of:

transferring a request from an HTTP-compliant device to a page server, said page server receiving said request and releasing said HTTP-compliant device to process other requests wherein said transferring step further includes the steps of:

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intercepting said request at said HTTP-compliant device and transferring said request to said page server;

processing said request, said processing being performed by said page server while said HTTP-compliant device concurrently processes said other requests; and

dynamically generating a page in response to said request, said page including data dynamically retrieved from one or more data sources

16 The computer-implemented method in claim 15 wherein said step of transferring said request includes the steps of:

transferring said request from said HTTP-compliant device to a dispatcher; and

dispatching said request to said page server.

17 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data

18 The computer-implemented method in claim 15 wherein said step of dynamically generating said page includes the step of dynamically retrieving said data from said one or more data sources

19 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources

20 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of logging into said one or more data sources

21 The computer-implemented method in claim 15 wherein said step of dynamically generating said page includes the step of maintaining a page cache containing said page

22 The computer-implemented method in claim 15 wherein said page server includes tag-based text templates for configuring said page

23 The computer-implemented method in claim 22 wherein said step of processing said request further includes the step of inserting said dynamically retrieved data from said one or more data sources into said tag-based text templates

24 The computer-implemented method in claim 22 wherein at least one of said tag-based text templates drives a format of the data dynamically retrieved from said one or more data sources in response to said request

25 The computer-implemented method in claim 22 wherein said tag-based text templates include HTML templates

26 The computer-implemented method in claim 15 wherein said step of processing said request further includes the step of dynamically updating data at said one or more data sources

27 The computer-implemented method in claim 15 wherein said step of processing said request further includes the step of processing an object handling extension

28 The computer-implemented method in claim 27 wherein said object handling extension is an OLE extension

29 A computer-implemented method comprising the steps of:

transferring a request from an HTTP-compliant device to a dispatcher;

maintaining dynamic information regarding data sources a given page server may access;

dispatching said request to an appropriate page server based on said request and based on said dynamic information, said page server receiving said request and

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releasing said HTTP-compliant device to process other requests;
processing said request, said processing being performed by said page server while said HTTP-compliant device concurrently processes said other requests; and

12

dynamically generating a page in response to said request, said page including data dynamically retrieved from one or more data sources

* * * * *

JS 44 (Rev 3/99)

CIVIL COVER SHEET

The JS-44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet (SEE INSTRUCTIONS ON THE REVERSE SIDE OF THE FORM)

2-05CV-356

I (a) PLAINTIFFS

epicRealm Licensing, LLC

(b) County of Residence of First Listed Plaintiff Dallas
(EXCEPT IN U.S. PLAINTIFF CASE)

DEFENDANTS

Franklin Covey Co, Clark Consulting, Inc, The Macerich Company, Safelite Group, Inc, Herbalife International of America, Inc, and Pink Sheets, LLC

County of Residence of First Listed Defendant _____
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED.

(c) Attorney's (Firm Name, Address, and Telephone Number)
(See Attachment)

Attorneys (If Known)

II BASIS OF JURISDICTION (Place an "X" in One Box Only)

- ☐ 1 U.S. Government Plaintiff
☐ 2 U.S. Government Defendant
☒ 3 Federal Question (U.S. Government Not a Party)
☐ 4 Diversity (Indicate Citizenship of Parties in Item III)

III CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant)

- | | PTF | DEF | | PTF | DEF |
|---|----------------------------|----------------------------|--|----------------------------|----------------------------|
| Citizen of This State | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 | Incorporated or Principal Place of Business in This State | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Citizen of Another State | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 | Incorporated or Principal Place of Business in Another State | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Citizen or Subject of a Foreign Country | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 | Foreign Nation | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

IV. NATURE OF SUITE (Place an "X" in One Box Only)

CONTRACT	TORTS		FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES
<input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (Excl. Veterans) <input type="checkbox"/> 153 Recovery of Overpayments of Veterans' Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability	PERSONAL INJURY <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury	PERSONAL INJURY <input type="checkbox"/> 362 Personal Injury - Med. Malpractice <input type="checkbox"/> 365 Personal Injury - Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability PERSONAL PROPERTY <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability	<input type="checkbox"/> 610 Agriculture <input type="checkbox"/> 620 Other Food & Drug <input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC <input type="checkbox"/> 630 Liquor Laws <input type="checkbox"/> 640 R.R. & Truck <input type="checkbox"/> 650 Airline Regs <input type="checkbox"/> 660 Occupational Safety / Health <input type="checkbox"/> 690 Other	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 PROPERTY RIGHTS <input type="checkbox"/> 820 Copyrights <input type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark	<input type="checkbox"/> 400 State Reappointment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce/ICC Rates/etc. <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 810 Selective Service <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 875 Customer Challenge 12 USC 3410 <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 892 Economic Stabilization Act <input type="checkbox"/> 894 Energy Allocation Act <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice <input type="checkbox"/> 950 Constitutionality of State Statutes <input type="checkbox"/> 890 Other Statutory Actions
REAL PROPERTY	CIVIL RIGHTS	PRISONER PETITIONS	LABOR	SOCIAL SECURITY	
<input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	<input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 444 Welfare <input type="checkbox"/> 440 Other Civil Rights	<input type="checkbox"/> 510 Motions to Vacate Sentence <input type="checkbox"/> Habeas Corpus <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition	<input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Mgmt. Relations <input type="checkbox"/> 730 Labor/Mgmt. Reporting & Disclosure Act <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Empl Ret Inc. Security Act	<input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g)) FEDERAL TAX SUITS <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS - Third Party 26 USC 7609	

V. ORIGIN (Place an "X" in One Box Only)

- ☒ 1 Original Proceeding
☐ 2 Removed from State Court
☐ 3 Remanded from Appellate Court
☐ 4 Reinstated or Reopened
☐ 5 Transferred from another district (specify)
☐ 6 Multidistrict Litigation
☐ 7 Appeal to District Judge from Magistrate Judgment

VI. CAUSE OF ACTION (Cite the U.S. Civil Statute under which you are filing and write brief statement of cause. Do not cite jurisdictional statutes under diversity.)

35 USC § 271

Cause for patent infringement

VII REQUESTED IN COMPLAINT:

☐ CHECK IF THIS IS A CLASS ACTION

DEMAND \$

CHECK YES only if demanded in complaint:

JURY DEMAND: ☒ Yes ☐ No

VIII RELATED CASE(S) (See IF ANY instructions):

JUDGE Folsom, DavidJUDGE Ward, JohnDOCKET NUMBER 2:05cv150DOCKET NUMBER 2:05cv163Date Aug 5, 2005 SIGNATURE OF ATTORNEY OF RECORD

FOR OFFICE USE ONLY

RECEIPT #

AMOUNT

APPLYING FFP

JUDGE

MAG JUDGE

DAL01:864478 1

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EXHIBIT B

elsewhere in the State of Texas Herbalife may be served with process by service upon its registered agent, United States Corp. Company, 701 Brazos Street, Suite 1050, Austin, Texas 78701.

7. On information and belief, defendant Pink Sheets, LLC, ("Pink Sheets") is an New York limited liability company, with its principal place of business at 304 Hudson St. 2nd Floor, New York, New York 10013, Attention: R. Cromwell Coulson, Chairman and CEO. Although Pink Sheets has done — and continues to do — business in the Eastern District and elsewhere in the State of Texas, it has not designated or maintained an agent for service of process in Texas. Accordingly, pursuant to Section 17.044 of the Texas Civil Practice and Remedies Code, Pink Sheets may be served with process by service upon the Texas Secretary of State, 1019 Brazos Street, Austin, Texas 78701

II. JURISDICTION AND VENUE

8. This infringement action arises under the patent laws of the United States, title 35, United States Code. This Court has jurisdiction of this action under 28 U.S.C. §§ 1331, 1338(a).

9. All of the defendants have done — and continue to do — business in the Eastern District of Texas. All defendants have minimum contacts with the Eastern District of Texas such that this venue is a fair and reasonable one. The defendants have committed purposeful acts or transactions in the State of Texas such that they reasonably knew and expected that they could be haled into a Texas court as a consequence of such activity. Accordingly, venue in the Eastern District of Texas is proper under 28 U.S.C. §§ 1391(b), 1400(b).

III. PATENT INFRINGEMENT

10. On April 13, 1999, and July 2, 2002, United States Patent Nos. 5,894,554 and 6,415,335 B1, which are collectively referred to as the "epicRealm Patents," duly and legally issued. These two patents concern, among other things, systems and methods for managing dynamic Web page generation requests. Copies of the epicRealm Patents are attached hereto as Exhibits "A" and "B" and made a part hereof.

11. EpicRealm is the owner of the epicRealm Patents and has the right to enforce those patents with respect to the defendants.

12. On information and belief, defendants use systems and methods for managing dynamic Web page generation requests within the scope of one or more of the claims of the epicRealm Patents. As a result, all of the defendants have been and still are infringing one or more of the claims of the epicRealm Patents as defined by 35 U.S.C. § 271 (a), (b), and/or (c). EpicRealm has suffered damage by reason of defendants' infringement and will continue to suffer additional damage until this Court enjoins the infringing conduct.

13. To the extent that defendants have continued or do continue their infringing activities after receiving notice of the epicRealm Patents, such infringement is willful, entitling epicRealm to the recovery of increased damages under 35 U.S.C. § 284.

14. This is an "exceptional case" justifying an award of attorneys' fees and costs to epicRealm pursuant to 35 U.S.C. § 285.

15. EpicRealm believes that defendants will continue to infringe the epicRealm Patents unless enjoined by this Court. Such infringing activity causes epicRealm irreparable harm and will continue to cause such harm without the issuance of an injunction.

IV. JURY DEMAND

- 16 Plaintiff requests trial by jury pursuant to Federal Rule of Civil Procedure
- 38.

V. PRAYER FOR RELIEF

17. EpicRealm requests that the Court find in its favor and against defendants and that the Court grant the following relief:

- a Judgment that one or more of the claims of the epicRealm Patents have been infringed, either literally and/or under the doctrine of equivalents, by defendants;
- b Judgment in favor of epicRealm for the full amount of its actual damages caused by defendants' infringing activities, including an assessment of interest and costs;
- c Judgment for increased damages for willful infringement pursuant to 35 U.S.C. § 284;
- d Judgment that this is an "exceptional case" and awarding epicRealm its reasonable attorneys' fees and costs pursuant to 35 U.S.C. § 285;
- e That defendants be permanently enjoined from further activity or conduct that infringes the claims of the epicRealm Patents; and
- f That the Court award epicRealm such other and further relief as is just and proper under the circumstances.

Respectfully submitted,

/s/ Larry D. Carlson

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ATTORNEYS FOR PLAINTIFF
EPICREALM LICENSING, L.L.C.

CERTIFICATE OF SERVICE

I certify that on _____, 2005, all counsel are being served with a copy of this document either: (1) by the Court's Electronic Filing System, pursuant to Local Rule CV-5(a)(3)(A), if they have consented to electronic service, or (2) by electronic mail, pursuant to Local Rule CV-5(e), if they have not so consented.

/s/ Larry D. Carlson
Larry D. Carlson

EXHIBIT C

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

EPICREALM LICENSING, LLC,

Plaintiff,

V.

- (1) FRANKLIN COVEY CO.
- (2) CLARK CONSULTING, INC.,
- (3) THE MACERICH COMPANY,
- (4) SAFELITE GROUP, INC.,
- (5) HERBALIFE INTERNATIONAL
OF AMERICA, INC., and
- (6) PINK SHEETS, LLC,

Defendants.

Civil Action No. 2:05-CV-356

Hon. David Folsom (Jury)

**ANSWER AND COUNTERCLAIMS OF DEFENDANT HERBALIFE
INTERNATIONAL OF AMERICA, INC. IN RESPONSE TO
PLAINTIFF EPICREALM LICENSING, LLC'S FIRST AMENDED COMPLAINT**

Defendant Herbalife International of America, Inc. (“Herbalife”), by counsel, answers the First Amended Complaint in the above action (the “Complaint”), but solely insofar as its allegations pertain to Herbalife. Nothing herein is intended as a response on behalf of or with respect to the other named defendants in this action. Paragraph numbers 1-17, below, correspond to the paragraph numbers of the allegations in the Complaint to which they respond:

I. PARTIES

1. Herbalife is without knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 1, and, accordingly, denies same.

2. Not applicable to Herbalife.

3. Not applicable to Herbalife.

4. Not applicable to Herbalife.

5. Not applicable to Herbalife.

6. Herbalife admits that it does business in this district and elsewhere in Texas by selling nutritional and personal care products to residents of the State of Texas. Herbalife further admits that service may be made upon Herbalife's registered agent in Texas. The remaining allegations of paragraph 6 are denied.

7. Not applicable to Herbalife.

II. JURISDICTION AND VENUE

8. Herbalife admits that the Complaint purports to assert an infringement of two United States patents, and that as such this Court has subject matter jurisdiction. Except as so admitted, Herbalife denies the remaining allegations of paragraph 8.

9. Herbalife admits, for purposes of this action only, that venue in this judicial district is proper. Except as so admitted, Herbalife denies the remaining allegations of paragraph 9.

III. PATENT INFRINGEMENT

10. Herbalife admits that copies of U.S. Patent No. 5,894,554 ("the '554 patent") and U.S. Patent No. 6,415,335 ("the '335 patent"), were provided as exhibits to the Complaint and that the patents, on their face, list an issuance date of April 13, 1999 and July 2, 2002, respectively. Herbalife further admits that, on their face, the '554 and '335 patents purport to concern systems and methods for managing dynamic web page generation requests. The remaining allegations of paragraph 10 are denied.

11. Herbalife is without knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 11, and, accordingly, denies same.

12. Denied.

13. Denied.

14. Denied.

15. Denied.

IV. JURY DEMAND

16. Paragraph 16 requires no response from Herbalife.

V. PRAYER FOR RELIEF

17. Paragraph 17 concerns Plaintiff's prayer for relief for which no response is necessary. To the extent a reply is deemed necessary, Herbalife denies that Plaintiff is entitled to any judgment or relief.

DEFENSES

Further answering the Complaint, Herbalife asserts the following defenses. Herbalife maintains the right to amend its answer with additional defenses as further information is obtained.

1. The Complaint fails to state a claim against Herbalife upon which relief can be granted.

2. On information and belief, Herbalife has not in the past and does not presently infringe any claim of the '554 patent or the '335 patent.

3. On information and belief, the '554 patent and the '335 patent are invalid for failure to comply with one or more provisions of the Patent Laws, Title 35 United States Code.

4. Plaintiff is estopped from construing the claims of the '554 patent or the '335 patent in such a manner as may cover Herbalife's activities by virtue of admissions and representations made to the United States Patent and Trademark Office during prosecution of the

applications that matured into the '554 patent and the '335 patent and legally related applications, and by virtue of admissions and representations made in this or any other litigation.

5. Plaintiff is barred under 35 U.S.C. § 287 from recovering damages for any alleged infringement occurring before Plaintiff provided actual notice to Herbalife of its alleged infringement of the '554 patent and the '335 patent.

6. Under the provisions of 35 U.S.C. § 286, Plaintiff is precluded from seeking recovery for any alleged infringement occurring more than six years before the filing of the Complaint.

7. Plaintiff's claims against Herbalife are barred, in whole or in part, by laches.

COUNTERCLAIMS

In addition to its defenses, Herbalife asserts the following counterclaims against Plaintiff.

1. Herbalife is a California corporation with its principal place of business at 1800 Century Park East, Los Angeles, CA 90067.

2. According to the Complaint, counterclaim defendant epicRealm Licensing, LLC ("epicRealm") is a Texas limited liability company with its principal place of business at 100 Crescent Court, Suite 700, Dallas, Texas 75201.

3. The Court has subject matter jurisdiction to hear these counterclaims under 28 U.S.C. §§1331, 1338(a), and the Declaratory Judgments Act, 28 U.S.C. §§ 2201-02.

4. Venue is proper in this district under 28 U.S.C. §§ 1391(b), (c) and 1400.

5. EpicRealm purports to be the owner of the '554 patent and the '335 patent and has asserted that Herbalife infringes these two patents.

6. There exists an actual and justiciable controversy between Plaintiff and Herbalife with respect to the alleged infringement and validity of the '554 patent and the '335 patent.

7. Herbalife does not infringe the '554 patent or the '335 patent, and has never done so.

8. The '554 patent and the '335 patent are invalid for failure to comply with one or more provisions of the United States Patent Laws, Title 35 United States Code.

9. Herbalife seeks a declaratory judgment of noninfringement and invalidity of the '554 patent and the '335 patent.

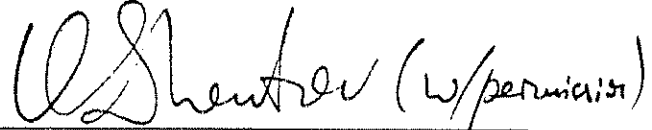
PRAYER FOR RELIEF

WHEREFORE, Herbalife prays that the Court:

- (i) dismiss the Complaint with prejudice;
- (ii) declare, adjudge, and decree that Herbalife has not and does not infringe the '554 patent and the '335 patent;
- (iii) declare, adjudge, and decree that the '554 patent and the '335 patent are invalid;
- (iv) issue preliminary and permanent injunctions against plaintiff's assertion of the '554 patent and the '335 patent;
- (v) find this to be an exceptional case under Section 285 of Title 35 of the United States Code, and award Herbalife its costs, disbursements, and attorneys' fees incurred in this action; and
- (vi) award Herbalife such other and further relief as the Court may deem just and proper.

Dated: November 17, 2005

Respectfully submitted,



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Attorneys for Defendant HERBALIFE
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PROOF OF SERVICE

The undersigned certifies that on the 17th day of November 2005, the foregoing
**ANSWER AND COUNTERCLAIMS OF DEFENDANT HERBALIFE
INTERNATIONAL OF AMERICA, INC. IN RESPONSE TO PLAINTIFF EPICREALM
LICENSING, LLC'S FIRST AMENDED COMPLAINT** were electronically filed with the
Court. Notice of this filing will be sent to all counsel of record by operation of the Court's
electronic filing system.

s/ Ognjan V. Shentov

EXHIBIT D

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

QUINSTREET, INC.,)	
)	
Plaintiff,)	
)	
v.)	
)	Civil Action No.
EPICREALM LICENSING, LP,)	
)	
Defendant.)	
)	

COMPLAINT FOR DECLARATORY JUDGMENT

Plaintiff QuinStreet, Inc. ("QuinStreet") for its complaint against Defendant epicRealm Licensing, LP ("epicRealm"), alleges as follows:

THE PARTIES

1. Plaintiff QuinStreet, Inc. is a corporation organized and existing under the laws of the State of California, having its principal place of business located at Foster City, California 94404.

2. Defendant epicRealm is a limited partnership organized and existing under the laws of the State of Delaware, having its principal place of business at 558 S. Central Expressway, Richardson, Texas 75080-6126.

JURISDICTION AND VENUE

3. This is a complaint for declaratory relief under the patent laws of the United States. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201(a) and 2202.

4. This Court has personal jurisdiction over epicRealm by virtue of its organization under the laws of the State of Delaware

5. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b), (c) and 1400(b).

THE EPICREALM PATENTS

6. U.S. Patent No. 5,894,554 (the “‘554 patent”) issued on April 13, 1999 and is entitled “System for Managing Dynamic Web Page Generation Requests by Intercepting Request at Web Server and Routing to Page Server Thereby Releasing Web Server to Process Other Requests.”

7. U.S. Patent No. 6,415,335 (the “‘335 patent”) issued on July 2, 2002 from a division of U.S. Patent Application No. 08/636,477, now the ‘554 patent, and is entitled “System and Method for Managing Dynamic Web Page Generation Requests.”

8. epicRealm asserts that it is the owner and assignee of the ‘554 and ‘335 patents (the “epicRealm patents”) and has the right to enforce the epicRealm patents against QuinStreet. Copies of the epicRealm patents are attached hereto as Exhibits A and B

EPICREALM'S PATENT INFRINGEMENT LAWSUITS

9. On April 15, 2005, epicRealm, then known as epicRealm Licensing, LLC, filed a patent infringement complaint in the District Court for the Eastern District of Texas (Marshall Division) accusing defendant Speedera Networks, Inc. of infringing the epicRealm patents “by making and using network infrastructures that manage dynamic Web page generation requests that infringe one or more of the claims set forth in the epicRealm patents”. That action was assigned Civil Action No. 2:05-CV-150DF (the “Speedera action”) and was originally assigned to United States District Court Judge David Folsom. This case has been resolved by settlement.

10. On May 2, 2005, epicRealm, then known as epicRealm Licensing, LLC, filed a patent infringement complaint in the District Court for the Eastern District of Texas (Marshall Division) accusing defendants Autoflex Leasing, Inc., eHarmony.com, Inc., Friendfinder Network, Inc., Grande Communication Networks, Inc., IJL-NCP, LLC and Transplace Texas, LP of infringing the epicRealm patents. That action was assigned Civil Action No. 2:05-CV-163 (the “163 action”) and was originally assigned to United States District Court Judge T. John Ward. On June 10, 2005, epicRealm filed a First Amended Complaint in the ‘163 action.

11. On August 5, 2005, epicRealm filed a patent infringement complaint in the District Court for the Eastern District of Texas (Marshall Division) accusing defendants Franklin Covey Co., Clark Consulting, Inc., The Macerich Company, Safelite Group, Inc., Herbalife International of America, Inc. and Pink Sheets, LLC of infringing the epicRealm patents. That action was assigned Civil Action Number 2:05-CV-356 (the “356 action”) and was originally assigned to United States District Court Judge T. John Ward. On November 2, 2005, epicRealm filed a First Amended Complaint in the ‘356 action.

12. On November 2, 2005, Judge Ward consolidated the ‘163 and ‘356 actions (the “Consolidated epicRealm Actions”).

13. On November 9, 2005 and November 16, 2005 the Consolidated epicRealm Actions were reassigned to United States District Judge David Folsom.

14. On January 27, 2006, epicRealm filed a Second Amended Complaint in the Consolidated epicRealm Actions accusing defendants Autoflex Leasing, Inc., eHarmony.com, Inc., Friendfinder Network, Inc., Grande Communications Networks, Inc., Transplace Texas, LP, Franklin Covey Co., Clark Consulting, Inc., Macerich Company, Safelite Group, Inc., Herbalife International of America, Inc. and Pink Sheets, LLC of infringing the epicRealm patents.

**EPICREALM'S PATENT INFRINGEMENT ACCUSATIONS
AND QUINSTREET'S REASONABLE APPREHENSION OF SUIT**

15. In its Second Amended Complaint, epicRealm alleges that the named defendants infringe the epicRealm patents because they use systems and methods for managing requests for dynamic web pages falling within the claims of its patents.

16. QuinStreet operates systems for responding to requests for static and dynamic web pages and maintains hosting platforms for customers. QuinStreet has entered into web site hosting agreements with many customers

17. Herbalife International of America, Inc. ("Herbalife"), a defendant in the '356 action, is one such customer of QuinStreet.

18. Herbalife has asserted that its agreement with QuinStreet entitles it to a defense and indemnification from QuinStreet if it is accused of infringing a third party's intellectual property rights, and Herbalife has demanded that QuinStreet agree to defend and indemnify Herbalife from any and all claims asserted by epicRealm.

19. In the '356 action epicRealm contends that its patents must be broadly construed to cover virtually all systems and methods wherein dynamic web page requests are intercepted at a web server or other HTTP-compliant device and transferred to page server software capable of processing dynamic web pages. According to epicRealm, "[w]eb servers, caching servers, and layer-7 switches are types of HTTP-compliant devices. Web requests are initially evaluated by the HTTP-compliant device. The requests for dynamic content ... are transferred to the page server(s) (or application server, servlet container or software, etc) such as Tomcat, J-Boss, and/or Resin for processing." Per epicRealm, any system and method incorporating these or similar elements, along with releasing of the HTTP-compliant device to concurrently process other requests, violates its patents.

20 In correspondence to Clark Consulting Inc. ("Clark"), a defendant in the '356 action, epicRealm confirmed this position and advised that its contentions of patent infringement were not confined to any particular web site software or architecture, and asserted that other systems or methods employing server software "could, if used to generate web pages with dynamic content, be configured in a way that would infringe the claims of the epicRealm patents" The January 25, 2006 letter from epicRealm to Clark (the "epicRealm Letter") is attached hereto as Exhibit C.

21. QuinStreet employs several systems and methods for dynamic web page generation wherein dynamic web page requests are transferred from a web server to other server software for processing that would fall within the ambit of the claims of epicRealm's patents as those are interpreted by epicRealm In the '356 action epicRealm is requiring Herbalife to provide discovery disclosures to epicRealm regarding QuinStreet's use of its server software for generating web pages.

22. One of QuinStreet's customers which is not a party to any litigation brought by epicRealm has informed QuinStreet that in view of the '356 action, it is canceling its contract with QuinStreet pursuant to which QuinStreet provides it dynamic web page generating services.

23. epicRealm's patent infringement allegations in the Speedera action and in the Consolidated epicRealm Actions against Herbalife and others, its very broad interpretation of the reach of its patents' claims as exemplified in its infringement contentions and the epicRealm Letter, and epicRealm's demand for discovery of QuinStreet information from Herbalife cause QuinStreet to have a reasonable apprehension that (1) epicRealm will accuse QuinStreet, QuinStreet's products and/or QuinStreet's customers of infringing one or more claims of the epicRealm patents, and/or (2) additional QuinStreet customers will seek from or sue QuinStreet

for indemnity as a result of epicRealm's patent infringement claims; and/or (3) additional QuinStreet customers will seek to terminate their contracts with QuinStreet in view of the '356, the '163, and the Speedera actions or other subsequent claims by epicRealm that systems similar to those hosted by QuinStreet infringe epicRealm's patents.

FIRST CLAIM FOR RELIEF

(Declaratory Judgment of Noninfringement of the epicRealm Patents)

24. QuinStreet incorporates by reference Paragraphs 1 through 23 above.

25. By virtue of epicRealm's patent infringement allegations in the Speedera action and in the Consolidated epicRealm Actions against Herbalife and others, the epicRealm Letter, epicRealm's demand for discovery of QuinStreet information from Herbalife, and the actual loss of business by QuinStreet due to a customer's patent infringement concerns and the reasonable apprehension of additional such losses, an actual controversy exists between QuinStreet and epicRealm as to whether QuinStreet, QuinStreet's products and/or one or more QuinStreet customers infringe the epicRealm patents.

26. QuinStreet has not infringed and does not infringe, literally or under the doctrine of equivalents, either directly, indirectly or willfully, any valid and enforceable claim of the epicRealm patents.

27. Pursuant to 28 U.S.C. §§ 2201 and 2202, a judicial determination of the respective rights of the parties with respect to QuinStreet's noninfringement of the epicRealm patents is necessary and appropriate under the circumstances.

SECOND CLAIM FOR RELIEF

(Declaratory Judgment of Invalidity of the epicRealm Patents)

28. QuinStreet incorporates by reference Paragraphs 1 through 27 above.

29. By virtue of epicRealm's patent infringement allegations in the Speedera action and in the Consolidated epicRealm Actions against Herbalife and others, the epicRealm Letter,

epicRealm's demand for discovery of QuinStreet information from Herbalife, and the actual loss of business by QuinStreet due to a customer's patent infringement concerns and the reasonable apprehension of additional such losses, an actual controversy exists between QuinStreet and epicRealm as to the validity of the epicRealm patents.

30. Each claim of the epicRealm patents is invalid for failure to meet one or more of the conditions of patentability specified in 35 U.S.C. §§ 101, 102, 103 and/or 112

31. Pursuant to 28 U.S.C. §§ 2201 and 2202, a judicial determination of the respective rights of the parties with respect to the validity of the epicRealm patents is necessary and appropriate under the circumstances.

PRAYER

WHEREFORE, QuinStreet requests entry of judgment in its favor and against epicRealm as follows:

a. Declaring that QuinStreet and its software products that are used in conjunction with the delivery of dynamic web pages do not infringe, literally or under the doctrine of equivalents, either directly, indirectly or willfully, any valid and enforceable claim of the epicRealm patents;

b. Declaring that the claims of the epicRealm patents are invalid;

c. Decreeing this case an "exceptional case" within the meaning of 35 U.S.C. § 285 and awarding reasonable attorneys' fees to QuinStreet; and

d. Awarding QuinStreet such other costs and further relief as the Court deems just and proper.

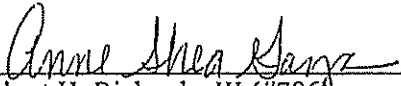
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EXHIBIT A



US005894554A

United States Patent [19]

Lowery et al.

[11] Patent Number: 5,894,554

[45] Date of Patent: Apr. 13, 1999

[54] **SYSTEM FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS BY INTERCEPTING REQUEST AT WEB SERVER AND ROUTING TO PAGE SERVER THEREBY RELEASING WEB SERVER TO PROCESS OTHER REQUESTS**

[75] Inventors: Keith Lowery, Richardson; Andrew B. Levine, Plano; Ronald L. Howell, Rowlett, all of Tex.

[73] Assignee: InfoSprinter, Inc., Richardson Tex

[21] Appl No: 08/636,477

[22] Filed: Apr. 23, 1996

[51] Int. Cl.⁸ G06F 13/14; G06F 13/20

[52] U.S. Cl. 395/200.33; 395/200.68; 395/200.75; 395/680; 707/10; 707/104

[58] Field of Search 395/700; 200.68; 200.75; 200.53; 680; 200.33; 707/104; 10

[56] **References Cited****U.S. PATENT DOCUMENTS**

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5,341,499	8/1994	Dorigh	395/700
5,392,400	2/1995	Berkowitz et al.	395/200
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5,404,527	4/1995	Irwin et al.	395/700

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5,532,838	7/1996	Barbati	358/400
5,751,956	5/1998	Kirsch	395/200.33
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"Beyond the Web: Excavating the Real World Via Mosaic". Goldberg et al. Second International WWW, Oct. 17, 1994
PCT International Search Report, Aug. 21, 1997

Primary Examiner—Thomas C. Lee

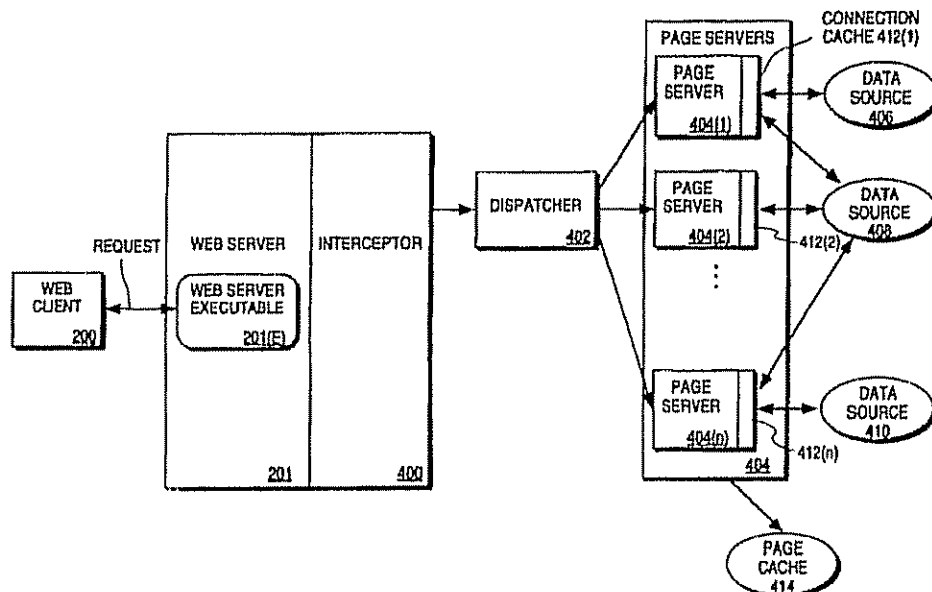
Assistant Examiner—Rehana Perveen

Attorney, Agent, or Firm—Diakely, Sokoloff, Taylor & Zafman LLP

[57] **ABSTRACT**

The present invention teaches a method and apparatus for creating and managing custom Web sites. Specifically, one embodiment of the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources.

11 Claims, 5 Drawing Sheets



U.S. Patent

Apr. 13, 1999

Sheet 1 of 5

5,894,554

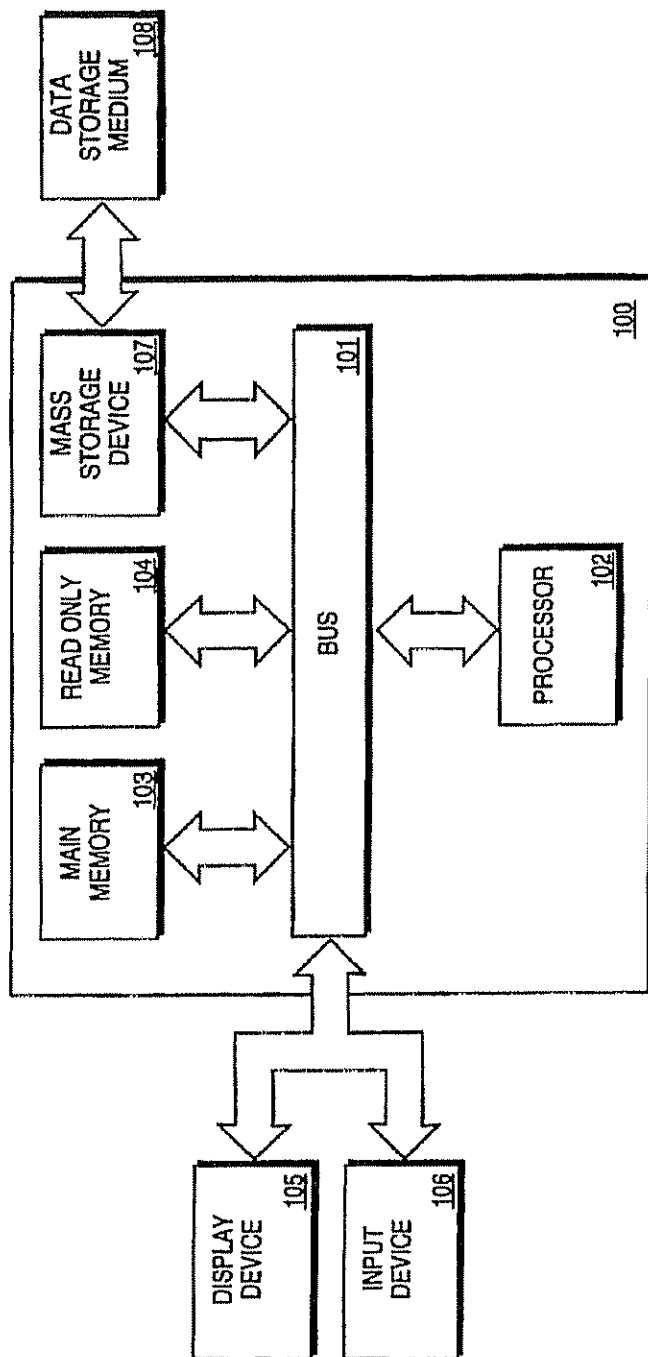


FIG. 1

U.S. Patent

Apr. 13, 1999

Sheet 2 of 5

5,894,554

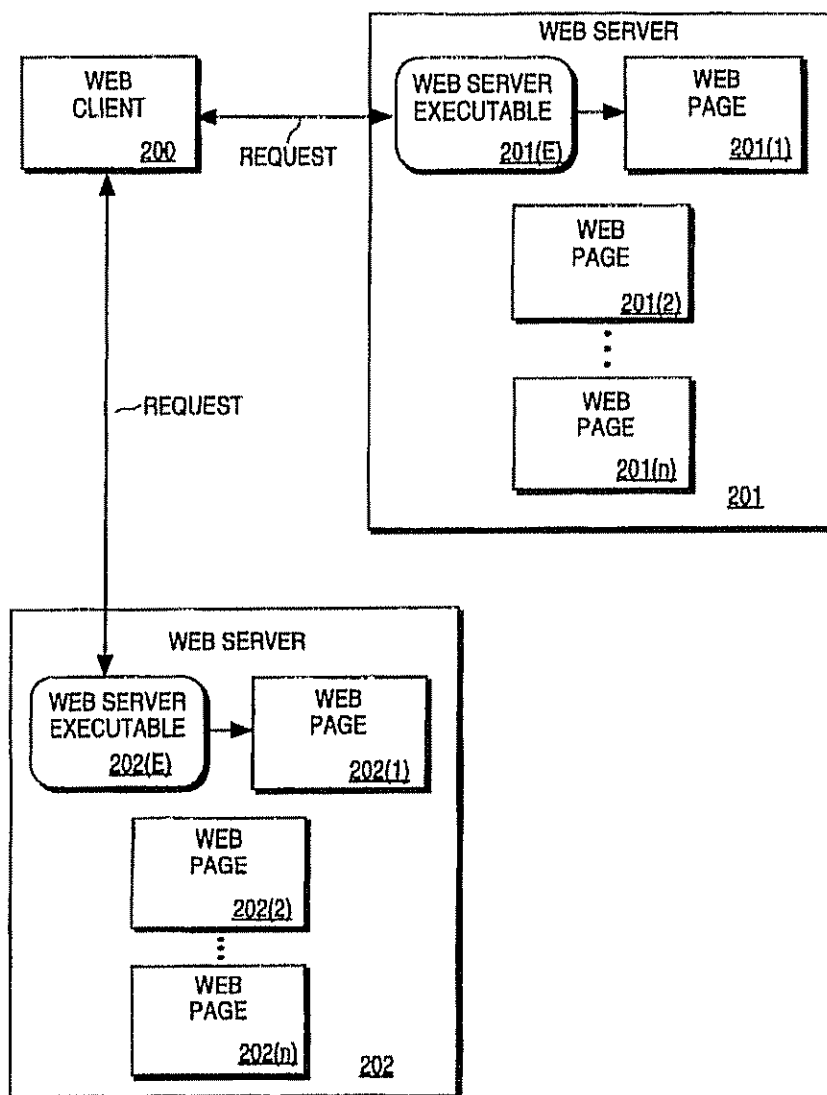


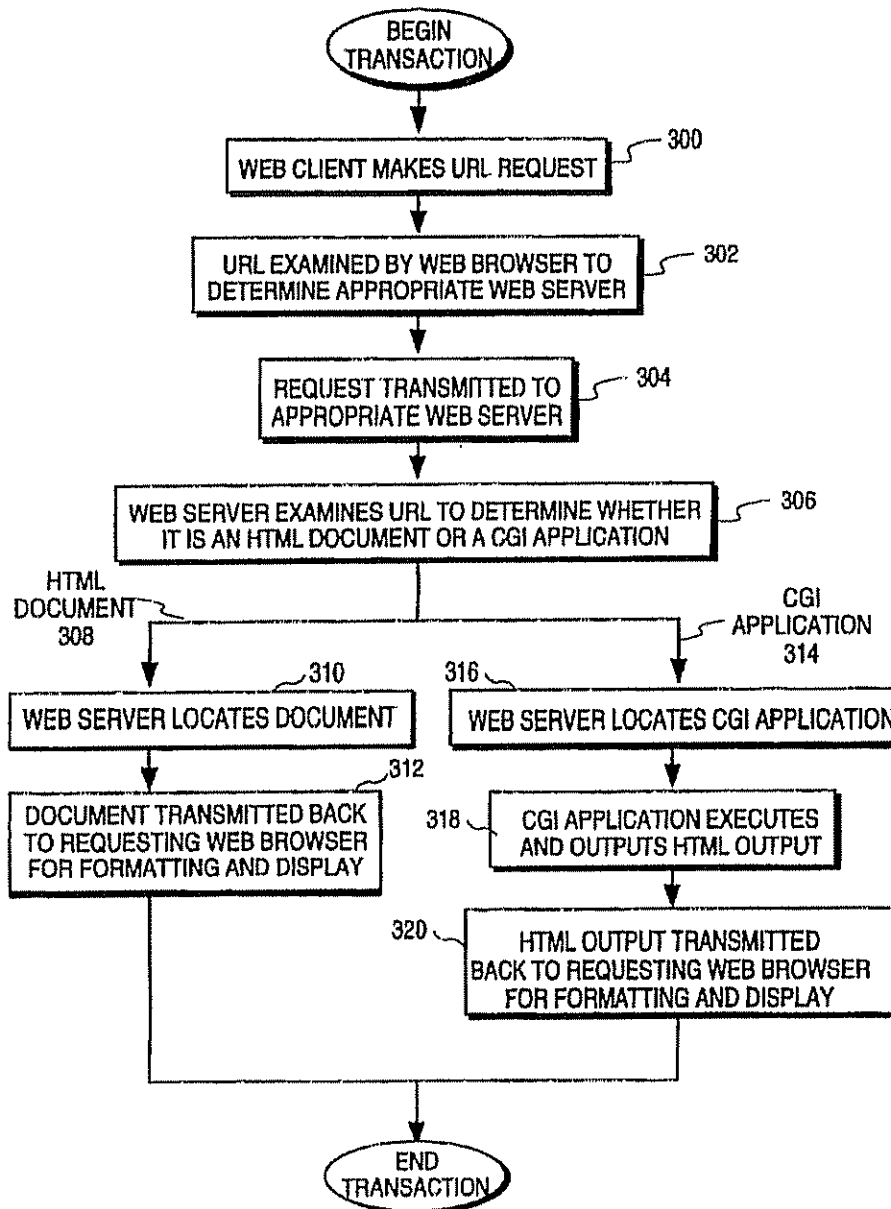
FIG. 2 (PRIOR ART)

U.S. Patent

Apr. 13, 1999

Sheet 3 of 5

5,894,554

**FIG. 3** (PRIOR ART)

U.S. Patent

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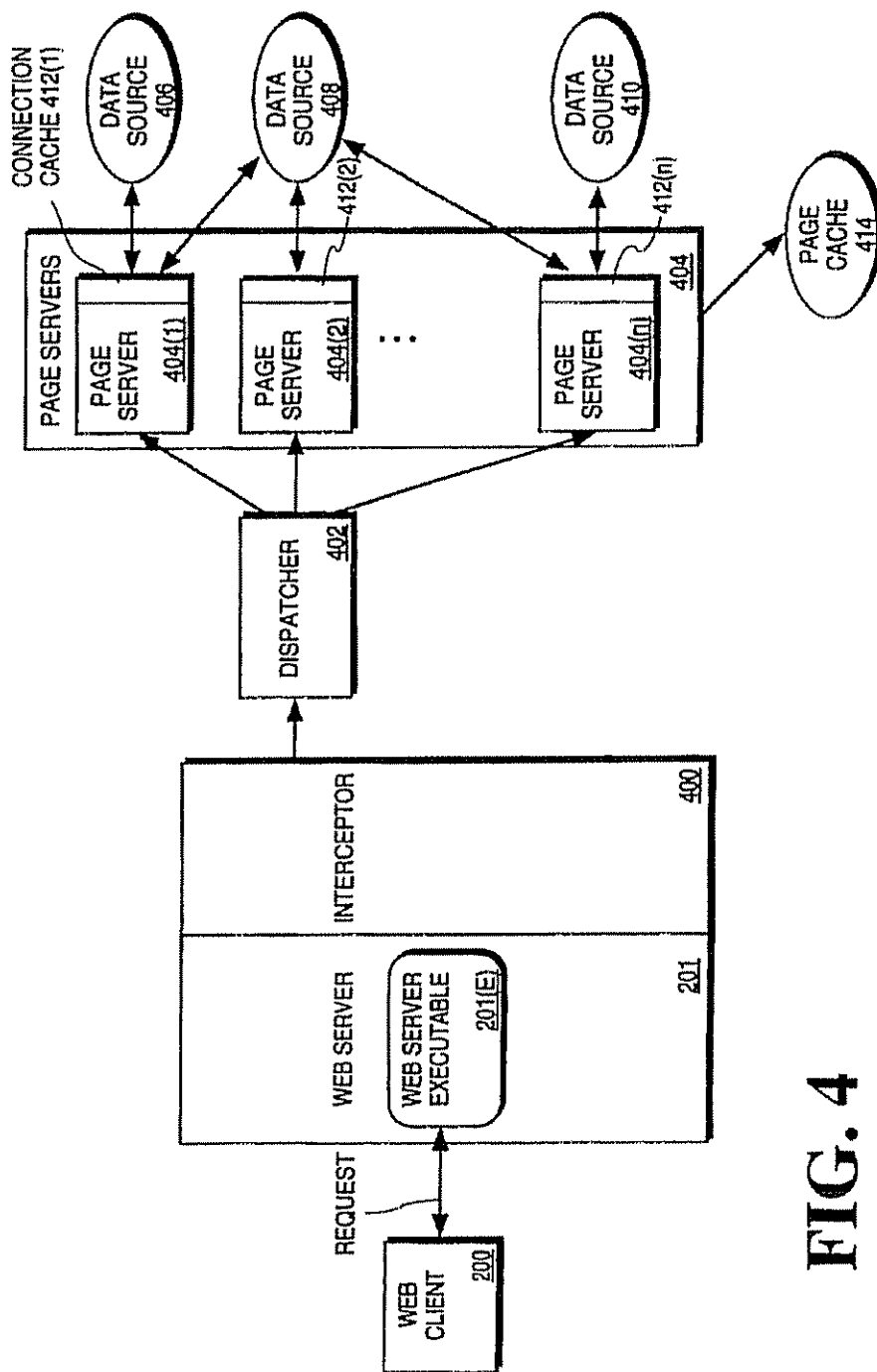


FIG. 4

U.S. Patent

Apr. 13, 1999

Sheet 5 of 5

5,894,554

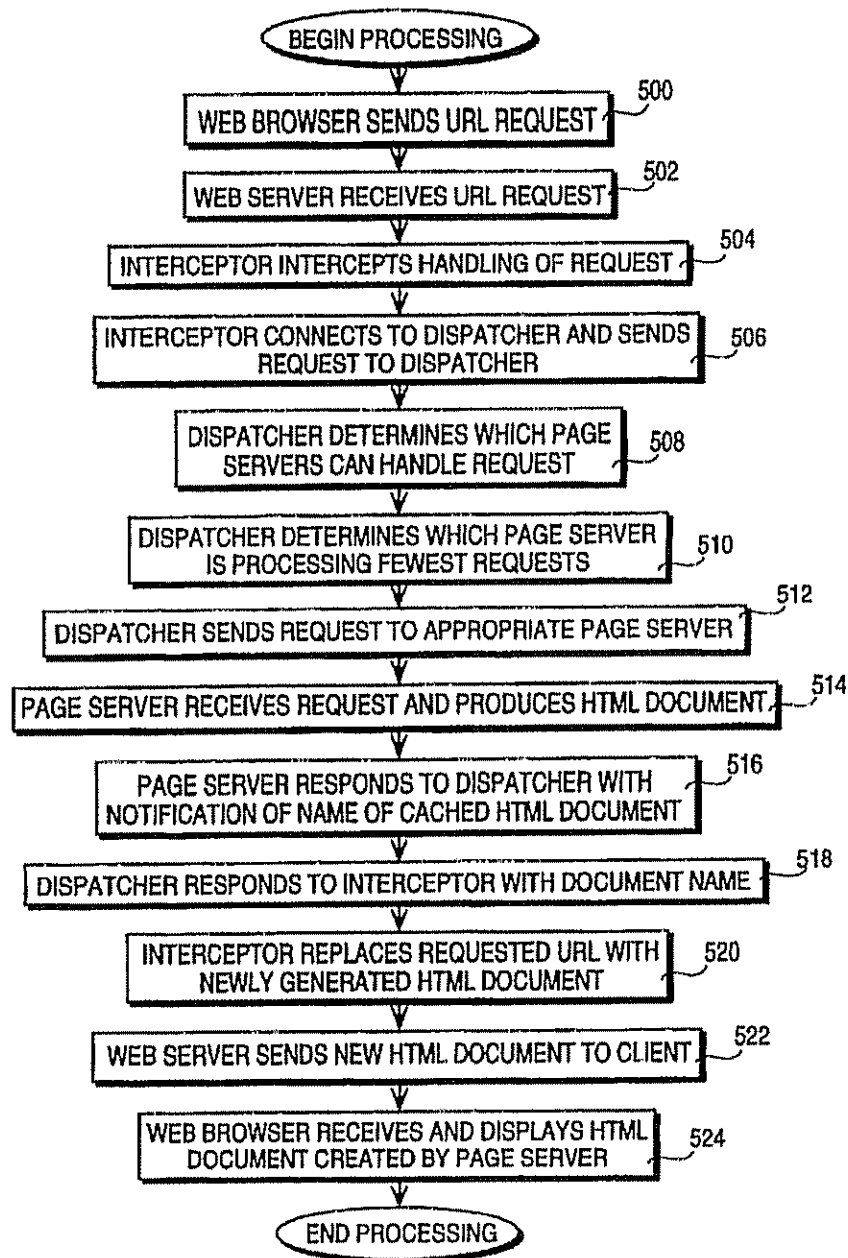


FIG. 5

5,894,554

1

**SYSTEM FOR MANAGING DYNAMIC WEB
PAGE GENERATION REQUESTS BY
INTERCEPTING REQUEST AT WEB
SERVER AND ROUTING TO PAGE SERVER
THEREBY RELEASING WEB SERVER TO
PROCESS OTHER REQUESTS**

FIELD OF THE INVENTION

The present invention relates to the field of Internet technology. Specifically, the present invention relates to the creation and management of custom World Wide Web sites.

DESCRIPTION OF RELATED ART

The World Wide Web (the Web) represents all of the computers on the Internet that offer users access to information on the Internet via interactive documents or Web pages. These Web pages contain hypertext links that are used to connect any combination of graphics, audio, video and text, in a non-linear, non-sequential manner. Hypertext links are created using a special software language known as HyperText Mark-Up Language (HTML).

Once created, Web pages reside on the Web, on Web servers or Web sites. A Web site can contain numerous Web pages. Web client machines running Web browsers can access these Web pages at Web sites via a communications protocol known as HyperText Transport Protocol (HTTP). Web browsers are software interfaces that run on World Wide Web clients to allow access to Web sites via a simple user interface. A Web browser allows a Web client to request a particular Web page from a Web site by specifying a Uniform Resource Locator (URL). A URL is a Web address that identifies the Web page and its location on the Web. When the appropriate Web site receives the URL, the Web page corresponding to the requested URL is located, and if required, HTML output is generated. The HTML output is then sent via HTTP to the client for formatting on the client's screen.

Although Web pages and Web sites are extremely simple to create, the proliferation of Web sites on the Internet highlighted a number of problems. The scope and ability of a Web page designer to change the content of the Web page was limited by the static nature of Web pages. Once created, a Web page remained static until it was manually modified. This in turn limited the ability of Web site managers to effectively manage their Web sites.

The Common Gateway Interface (CGI) standard was developed to resolve the problem of allowing dynamic content to be included in Web pages. CGI "calls" or procedures enable applications to generate dynamically created HTML output, thus creating Web pages with dynamic content. Once created, these CGI applications do not have to be modified in order to retrieve "new" or dynamic data. Instead, when the Web page is invoked, CGI "calls" or procedures are used to dynamically retrieve the necessary data and to generate a Web page.

CGI applications also enhanced the ability of Web site administrators to manage Web sites. Administrators no longer have to constantly update static Web pages. A number of vendors have developed tools for CGI based development, to address the issue of dynamic Web page generation. Companies like Spider™ and Bluestone™, for example, have each created development tools for CGI-based Web page development. Another company, Hahit Software™, has developed a Web page generation tool that uses a BASIC-like scripting language, instead of a CGI scripting language.

2

Tools that generate CGI applications do not, however, resolve the problem of managing numerous Web pages and requests at a Web site. For example, a single company may maintain hundreds of Web pages at their Web site. Current Web server architecture also does not allow the Web server to efficiently manage the Web page and process Web client requests. Managing these hundreds of Web pages in a coherent manner and processing all requests for access to the Web pages is thus a difficult task. Existing development tools are limited in their capabilities to facilitate dynamic Web page generation, and do not address the issue of managing Web requests or Web sites.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a method and apparatus for creating and managing custom Web sites. Specifically, the present invention claims a method and apparatus for managing dynamic web page generation requests.

In one embodiment, the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources. Other embodiments also include connection caches to the one or more data sources, page caches for each page server, and custom HTML extension templates for configuring the Web page.

Other objects, features and advantages of the present invention will be apparent from the accompanying drawings and from the detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a typical computer system in which the present invention operates.

FIG. 2 illustrates a typical prior art Web server environment.

FIG. 3 illustrates a typical prior art Web server environment in the form of a flow diagram.

FIG. 4 illustrates one embodiment of the presently claimed invention.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention.

**DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENT**

The present invention relates to a method and apparatus for creating and managing custom Web sites. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent to one of ordinary skill in the art, however, that these specific details need not be used to practice the present invention. In other instances, well-known structures, interfaces and processes have not been shown in detail in order not to unnecessarily obscure the present invention.

FIG. 1 illustrates a typical computer system 100 in which the present invention operates. The preferred embodiment of

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the present invention is implemented on an IBM™ Personal Computer manufactured by IBM Corporation of Armonk, N.Y. An alternate embodiment may be implemented on an RS/6000™ Workstation manufactured by IBM Corporation of Armonk, N.Y. It will be apparent to those of ordinary skill in the art that other computer system architectures may also be employed.

In general, such computer systems as illustrated by FIG 1 comprise a bus 101 for communicating information, a processor 102 coupled with the bus 101 for processing information, main memory 103 coupled with the bus 101 for storing information and instructions for the processor 102, a read-only memory 104 coupled with the bus 101 for storing static information and instructions for the processor 102, a display device 105 coupled with the bus 101 for displaying information for a computer user, an input device 106 coupled with the bus 101 for communicating information and command selections to the processor 102, and a mass storage device 107, such as a magnetic disk and associated disk drive, coupled with the bus 101 for storing information and instructions. A data storage medium 108 containing digital information is configured to operate with mass storage device 107 to allow processor 102 access to the digital information on data storage medium 108 via bus 101.

Processor 102 may be any of a wide variety of general purpose processors or microprocessors such as the Pentium™ microprocessor manufactured by Intel™ Corporation or the RS/6000™ processor manufactured by IBM Corporation. It will be apparent to those of ordinary skill in the art, however, that other varieties of processors may also be used in a particular computer system. Display device 105 may be a liquid crystal device, cathode ray tube (CRT), or other suitable display device. Mass storage device 107 may be a conventional hard disk drive, floppy disk drive, CD-ROM drive, or other magnetic or optical data storage device for reading and writing information stored on a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium. Data storage medium 108 may be a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium.

In general, processor 102 retrieves processing instructions and data from a data storage medium 108 using mass storage device 107 and downloads this information into random access memory 103 for execution. Processor 102 then executes an instruction stream from random access memory 103 or read-only memory 104. Command selections and information input at input device 106 are used to direct the flow of instructions executed by processor 102. Equivalent input device 106 may also be a pointing device such as a conventional mouse or trackball device. The results of this processing execution are then displayed on display device 105.

The preferred embodiment of the present invention is implemented as a software module, which may be executed on a computer system such as computer system 100 in a conventional manner. Using well known techniques, the application software of the preferred embodiment is stored on data storage medium 108 and subsequently loaded into and executed within computer system 100. Once initiated, the software of the preferred embodiment operates in the manner described below.

FIG 2 illustrates a typical prior art Web server environment. Web client 200 can make URL requests to Web server 201 or Web server 202. Web servers 201 and 202 include Web server executables, 201(E) and 202(E) respectively,

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that perform the processing of Web client requests. Each Web server may have a number of Web pages 201(1)-(n) and 202(1)-(n). Depending on the URL specified by the Web client 200, the request may be routed by either Web server executable 201(E) to Web page 201(1), for example, or from Web server executable 202(E) to Web page 202(1). Web client 200 can continue making URL requests to retrieve other Web pages. Web client 200 can also use hyperlinks within each Web page to "jump" to other Web pages or to other locations within the same Web page.

FIG 3 illustrates this prior art Web server environment in the form of a flow diagram. In processing block 300, the Web client makes a URL request. This URL request is examined by the Web browser to determine the appropriate Web server to route the request to in processing block 302. In processing block 304 the request is then transmitted from the Web browser to the appropriate Web server, and in processing block 306 the Web server executable examines the URL to determine whether it is a HTML document or a CGI application. If the request is for an HTML document 308, then the Web server executable locates the document in processing block 310. The document is then transmitted back through the requesting Web browser for formatting and display in processing block 312.

If the URL request is for a CGI application 314, however, the Web server executable locates the CGI application in processing block 316. The CGI application then executes and outputs HTML output in processing block 318 and finally, the HTML output is transmitted back to requesting Web browser for formatting and display in processing block 320.

This prior art Web server environment does not, however, provide any mechanism for managing the Web requests or the Web sites. As Web sites grow, and as the number of Web clients and requests increase, Web site management becomes a crucial need.

For example, a large Web site may receive thousands of requests or "hits" in a single day. Current Web servers process each of these requests on a single machine, namely the Web server machine. Although these machines may be running "multi-threaded" operating systems that allow transactions to be processed by independent "threads," all the threads are nevertheless on a single machine sharing a processor. As such, the Web executable thread may hand off a request to a processing thread, but both threads will still have to be handled by the processor on the Web server machine. When numerous requests are being simultaneously processed by multiple threads on a single machine, the Web server can slow down significantly and become highly inefficient. The claimed invention addresses this need by utilizing a partitioned architecture to facilitate the creation and management of custom Web sites and servers.

FIG 4 illustrates one embodiment of the presently claimed invention. Web client 200 issues a URL request that is processed to determine proper routing. In this embodiment, the request is routed to Web server 201. Instead of Web server executable 201(E) processing the URL request, however, Interceptor 400 intercepts the request and routes it to Dispatcher 402. In one embodiment, Interceptor 400 resides on the Web server machine as an extension to Web server 201. This embodiment is appropriate for Web servers such as Netsite™ from Netscape that support such extensions. A number of public domain Web servers, such as NCSA™ from the National Center for Supercomputing Applications at the University of Illinois, Urbana-Champaign, however, do not provide support for

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this type of extension. Thus, in an alternate embodiment, Interceptor 400 is an independent module, connected via an "intermediate program" to Web server 201. This intermediate program can be a simple CGI application program that connects Interceptor 400 to Web server 201. Alternate intermediate programs that perform the same functionality can also be implemented.

In one embodiment of the invention, Dispatcher 402 resides on a different machine than Web server 201. This embodiment overcomes the limitation described above, in prior art Web servers, wherein all processing is performed by the processor on a single machine. By routing the request to Dispatcher 402 residing on a different machine than the Web server executable 201(E), the request can then be processed by a different processor than the Web server executable 201(E). Web server executable 201(E) is thus free to continue servicing client requests on Web server 201 while the request is processed "off-line" at the machine on which Dispatcher 402 resides.

Dispatcher 402 can, however, also reside on the same machine as the Web server. The Web site administrator has the option of configuring Dispatcher 402 on the same machine as Web server 201, taking into account a variety of factors pertinent to a particular Web site, such as the size of the Web site, the number of Web pages and the number of hits at the Web site. Although this embodiment will not enjoy the advantage described above, namely off-loading the processing of Web requests from the Web server machine, the embodiment does allow flexibility for a small Web site to grow. For example, a small Web site administrator can use a single machine for both Dispatcher 402 and Web server 201 initially, then off-load Dispatcher 402 onto a separate machine as the Web site grows. The Web site can thus take advantage of other features of the present invention regardless of whether the site has separate machines configured as Web servers and dispatchers.

Dispatcher 402 receives the intercepted request and then dispatches the request to one of a number of Page servers 404(1)-(n). For example, if Page server 404(1) receives the dispatched request, it processes the request and retrieves the data from an appropriate data source, such as data source 406, data source 408, or data source 410. Data sources, as used in the present application, include databases, spreadsheets, files and any other type of data repository. Page server 404(1) can retrieve data from more than one data source and incorporate the data from these multiple data sources in a single Web page.

In one embodiment, each Page server 404(1)-(n) resides on a separate machine on the network to distribute the processing of the request. Dispatcher 402 maintains a variety of information regarding each Page server on the network, and dispatches requests based on this information. For example, Dispatcher 402 retains dynamic information regarding the data sources that any given Page server can access. Dispatcher 402 thus examines a particular request and determines which Page servers can service the URL request. Dispatcher 402 then hands off the request to the appropriate Page server.

For example, if the URL request requires financial data from data source 408, dispatcher 402 will first examine an information list. Dispatcher 402 may determine that Page server 404(3), for example, has access to the requisite data in data source 408. Dispatcher 402 will thus route the URL request to Page server 404(3). This "connection caching" functionality is described in more detail below, under the heading "Performance."

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Alternately, Dispatcher 402 also has the ability to determine whether a particular Page server already has the necessary data cached in the Page server's page cache (described in more detail below, under the heading "Performance"). Dispatcher 402 may thus determine that Page server 404(1) and 404(2) are both logged into Data source 408, but that Page server 404(2) has the financial information already cached in Page server 404(2)'s page cache. In this case, Dispatcher 402 will route the URL request to Page server 404(2) to more efficiently process the request.

Finally, Dispatcher 402 may determine that a number or all Page servers 404(1)-(n) are logged into Data source 408. In this scenario, Dispatcher 402 can examine the number of requests that each Page server is servicing and route the request to the least busy page server. This "load balancing" capability can significantly increase performance at a busy Web site and is discussed in more detail below, under the heading "Scalability."

If, for example, Page server 404(2) receives the request, Page server 404(2) will process the request. While Page server 404(2) is processing the request, Web server executable 201(E) can concurrently process other Web client requests. This partitioned architecture thus allows both Page server 404(2) and Web server executable 201(E) to simultaneously process different requests, thus increasing the efficiency of the Web site. Page server 404(2) dynamically generates a Web page in response to the Web client request, and the dynamic Web page is then either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201, for later retrieval.

One embodiment of the claimed invention also provides a Web page designer with HTML extensions, or "dyna" tags. These dyna tags provide customized HTML functionality to a Web page designer, to allow the designer to build customized HTML templates that specify the source and placement of retrieved data. For example, in one embodiment, a "dynatext" HTML extension tag specifies a data source and a column name to allow the HTML template to identify the data source to log into and the column name from which to retrieve data. Alternatively, "dyna-anchor" tags allow the designer to build hyperlink queries while "dynablock" tags provide the designer with the ability to iterate through blocks of data. Page servers use these HTML templates to create dynamic Web pages. Then, as described above, these dynamic Web pages are either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201, for later retrieval.

The presently claimed invention provides numerous advantages over prior art Web servers, including advantages in the areas of performance, security, extensibility and scalability.

Performance

One embodiment of the claimed invention utilizes connection caching and page caching to improve performance. Each Page server can be configured to maintain a cache of connections to numerous data sources. For example, as illustrated in FIG. 4, Page server 404(1) can retrieve data from data source 406, data source 408 or data source 410. Page server 404(1) can maintain connection cache 412(1), containing connections to each of data source 406, data source 408 and data source 410, thus eliminating connect times from the Page servers to those data sources.

Additionally, another embodiment of the present invention supports the caching of finished Web pages, to optimize

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the performance of the data source being utilized. This "page caching" feature, illustrated in FIG. 4 as Page cache 414, allows the Web site administrator to optimize the performance of data sources by caching Web pages that are repeatedly accessed. Once the Web page is cached, subsequent requests or "hits" will utilize the cached Web page rather than re-accessing the data source. This can radically improve the performance of the data source.

Security

The present invention allows the Web site administrator to utilize multiple levels of security to manage the Web site. In one embodiment, the Page server can utilize all standard encryption and site security features provided by the Web server. In another embodiment, the Page server can be configured to bypass connection caches 412(1)-(n), described above, for a particular data source and to require entry of a user-supplied identification and password for the particular data source the user is trying to access.

Additionally, another embodiment of the presently claimed invention requires no real-time access of data sources. The Web page caching ability, described above, enables additional security for those sites that want to publish non-interactive content from internal information systems, but do not want real-time Internet accessibility to those internal information systems. In this instance, the Page server can act as a "replication and staging agent" and create Web pages in batches, rather than in real-time. These "replicated" Web pages are then "staged" for access at a later time, and access to the Web pages in this scenario is possible even if the Page server and dispatcher are not present later.

In yet another embodiment, the Page server can make a single pass through a Web library, and compile a Web site that exists in the traditional form of separately available files. A Web library is a collection of related Web books and Web pages. More specifically, the Web library is a hierarchical organization of Web document templates, together with all the associated data source information. Information about an entire Web site is thus contained in a single physical file, thus simplifying the problem of deploying Web sites across multiple Page servers. The process of deploying the Web site in this embodiment is essentially a simple copy of a single file.

Extensibility

One embodiment of the present invention provides the Web site administrator with Object Linking and Embedding (OLE) 2.0 extensions to extend the page creation process. These OLE 2.0 extensions also allow information submitted over the Web to be processed with user-supplied functionality. Utilizing development tools such as Visual Basic, Visual C++ or PowerBuilder that support the creation of OLE 2.0 automation, the Web site administrator can add features and modify the behavior of the Page servers described above. This extensibility allows one embodiment of the claimed invention to be incorporated with existing technology to develop an infinite number of custom web servers.

For example, OLE 2.0 extensions allow a Web site administrator to encapsulate existing business rules in an OLE 2.0 automation interface, to be accessed over the Web. One example of a business rule is the steps involved in the payoff on an installment or mortgage loan. The payoff may involve, for example, taking into account the current balance, the date and the interest accrued since the last payment. Most organizations already have this type of

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business rule implemented using various applications, such as Visual Basic for client-server environments, or CICS programs on mainframes. If these applications are OLE 2.0 compliant, the Page server "dynaobject" HTML extension tag can be used to encapsulate the application in an OLE 2.0 automation interface. The Page server is thus extensible, and can incorporate the existing application with the new Page server functionality.

Scalability

One embodiment of the claimed invention allows "plug and play" scalability. As described above, referring to FIG. 4, Dispatcher 402 maintains information about all the Page servers configured to be serviced by Dispatcher 402. Any number of Page servers can thus be "plugged" into the configuration illustrated in FIG. 4, and the Page servers will be instantly activated as the information is dynamically updated in Dispatcher 402. The Web site administrator can thus manage the overhead of each Page server and modify each Page server's load, as necessary, to improve performance. In this manner, each Page server will cooperate with other Page servers within a multi-server environment. Dispatcher 402 can examine the load on each Page server and route new requests according to each Page server's available resources. This "load-balancing" across multiple Page servers can significantly increase a Web site's performance.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention. A Web browser sends a URL request to a Web server in processing block 500. In processing block 502, the Web server receives the URL request, and an interceptor then intercepts the handling of the request in processing block 504. The interceptor connects to a dispatcher and sends the URL request to the dispatcher in processing block 506. In processing block 508, the dispatcher determines which Page servers can handle the request. The dispatcher also determines which Page server is processing the fewest requests in processing block 510, and in processing block 512, the dispatcher sends the URL request to an appropriate Page server. The Page server receives the request and produces an HTML document in processing block 514. The Page server then responds to the dispatcher with notification of the name of the cached HTML document in processing block 516. In processing block 518, the dispatcher responds to the interceptor with the document name, and the interceptor then replaces the requested URL with the newly generated HTML document in processing block 520. The Web server then sends the new HTML document to the requesting client in processing block 522. Finally, the Web browser receives and displays the HTML document created by the Page server at processing block 524.

Thus, a method and apparatus for creating and managing custom Web sites is disclosed. These specific arrangements and methods described herein are merely illustrative of the principles of the present invention. Numerous modifications in form and detail may be made by those of ordinary skill in the art without departing from the scope of the present invention. Although this invention has been shown in relation to a particular preferred embodiment, it should not be considered so limited. Rather, the present invention is limited only by the scope of the appended claims.

We claim:

1. A computer-implemented method for managing a dynamic Web page generation request to a Web server, said computer-implemented method comprising the steps of:
 routing said request from said Web server to a page server,
 said page server receiving said request and releasing

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said Web server to process other requests, wherein said routing step further includes the steps of intercepting said request at said Web server, routing said request from said Web server to a dispatcher, and dispatching said request to said page server;

processing said request, said processing being performed by said page server while said Web server concurrently processes said other requests; and

dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from one or more data sources.

2 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data.

3. The computer-implemented method in claim 2 wherein said step of dynamically generating said Web page includes the step of dynamically retrieving said data from said one or more data sources.

4 The computer-implemented method in claim 3 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources.

5 The computer-implemented method in claim 3 wherein said step of processing said request includes the step of logging into said one or more data sources.

6 The computer-implemented method in claim 3 wherein said step of dynamically generating said Web page includes the step of maintaining a page cache containing said Web page.

7. The computer-implemented method in claim 3 wherein said page server includes custom HTML extension templates for configuring said Web page.

8 The computer-implemented method in claim 7 wherein said step of processing said request further includes the step of inserting said dynamically retrieved data from said one or more data sources into said custom HTML extension templates.

9 A networked system for managing a dynamic Web page generation request, said system comprising:

one or more data sources;

a page server having a processing means;

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a first computer system including means for generating said request; and

a second computer system including means for receiving said request from said first computer, said second computer system also including a router, said router routing said request from said second computer system to said page server, wherein said routing further includes intercepting said request at said second computer, routing said request from said second computer to a dispatcher, and dispatching said request to said page server said page server receiving said request and releasing said second computer system to process other requests, said page server processing means processing said request and dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from said one or more data sources.

10. The networked system in claim 9 wherein said router in said second computer system includes:

an interceptor intercepting said request at said second computer system and routing said request; and

a dispatcher receiving said routed request from said interceptor and dispatching said request to said page server.

11 A machine readable medium having stored thereon data representing sequences of instructions, which when executed by a computer system, cause said computer system to perform the steps of:

routing a dynamic Web page generation request from a Web server to a page server, said page server receiving said request and releasing said Web server to process other requests wherein said routing step further includes the steps of intercepting said request at said Web server, routing said request from said Web server to a dispatcher, and dispatching said request to said page server;

processing said request said processing being performed by said page server while said Web server concurrently processes said other requests; and

dynamically generating a Web page, said Web page including data retrieved from one or more data sources

* * * * *

EXHIBIT B



(12) **United States Patent**
Lowery et al.

(10) Patent No.: **US 6,415,335 B1**
(45) Date of Patent: ***Jul. 2, 2002**

(54) **SYSTEM AND METHOD FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS**

(75) Inventors: **Kelth Lowery, Richardson; Andrew B. Levine, Plano; Ronald L. Howell, Rowlett, all of TX (US)**

(73) Assignee: **epicRealm Operating Inc., Richardson, TX (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/234,048**

(22) Filed: **Jun. 19, 1999**

Related U.S. Application Data

(62) Division of application No. 08/636,477, filed on Apr. 23, 1996, now Pat. No. 5,894,554

(51) Int. Cl.: **G06F 13/14; G06F 13/20**

(52) U.S. Cl.: **710/5; 710/7; 709/219; 709/223; 709/238**

(58) Field of Search: **709/238, 223, 709/219; 710/5, 7, 20-21**

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Primary Examiner—Jeffrey Gallin

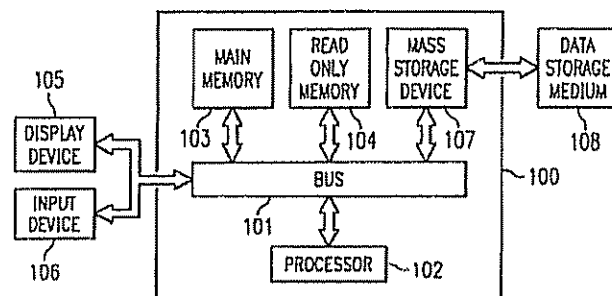
Assistant Examiner—Rehana Perveen

(74) Attorney, Agent, or Firm—Baker Botts L.L.P.

(57) **ABSTRACT**

The present invention teaches a method and apparatus for creating and managing custom Web sites. Specifically, one embodiment of the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources.

29 Claims, 4 Drawing Sheets



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FIG. 1

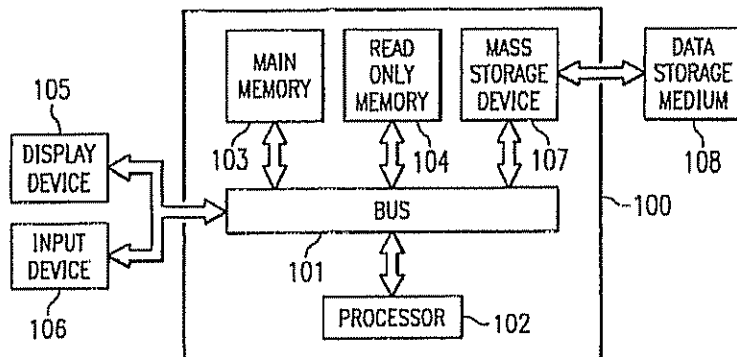
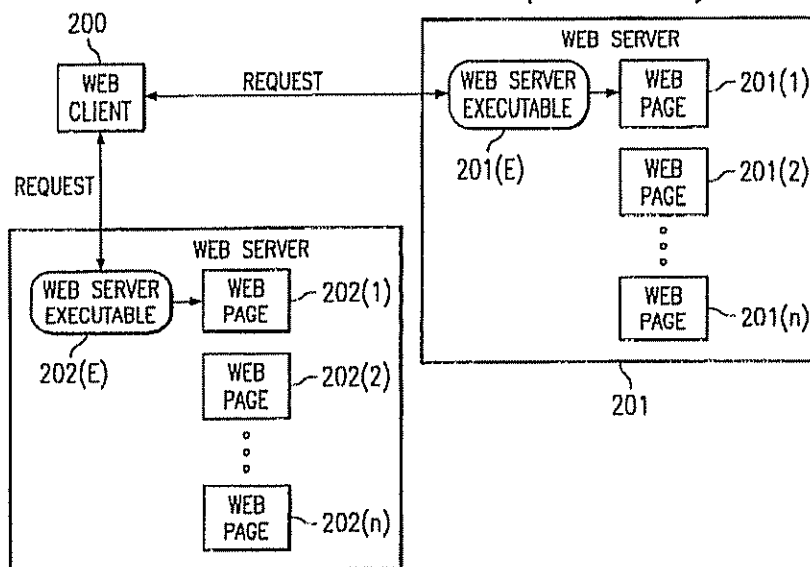


FIG. 2
(PRIOR ART)



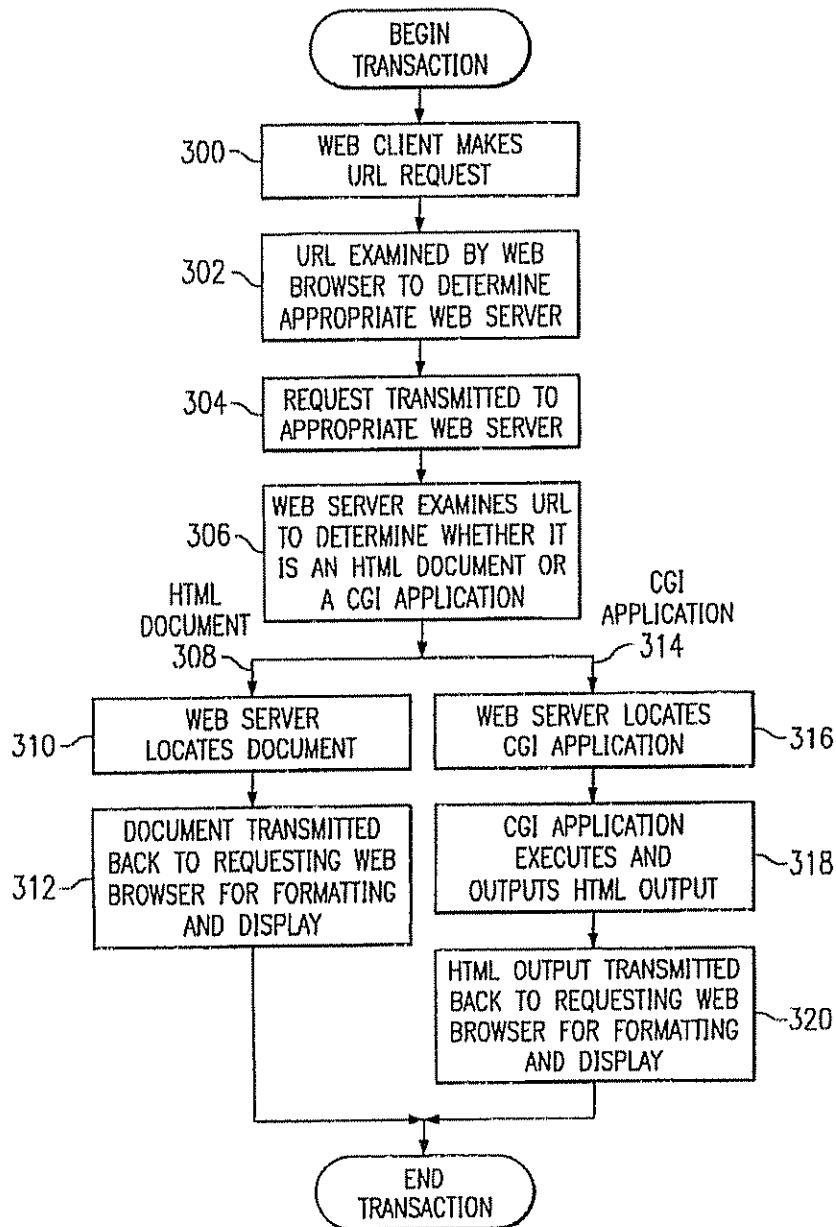
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FIG. 3
(PRIOR ART)

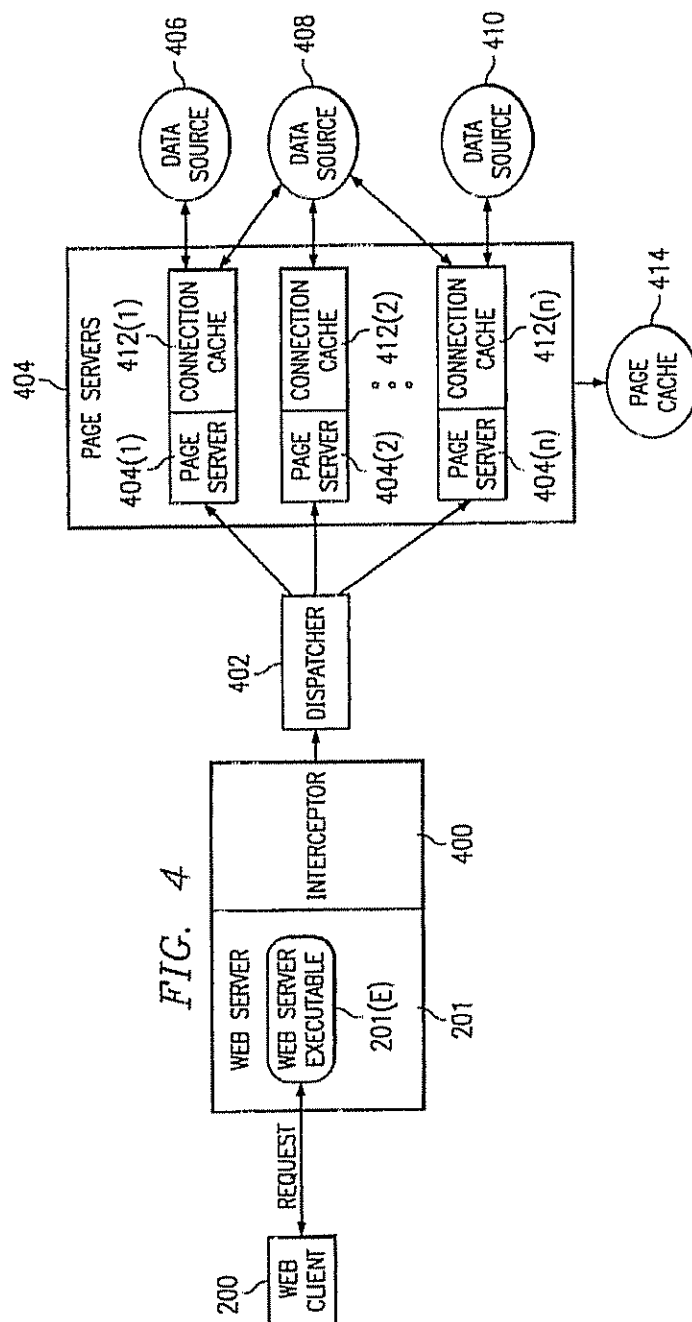


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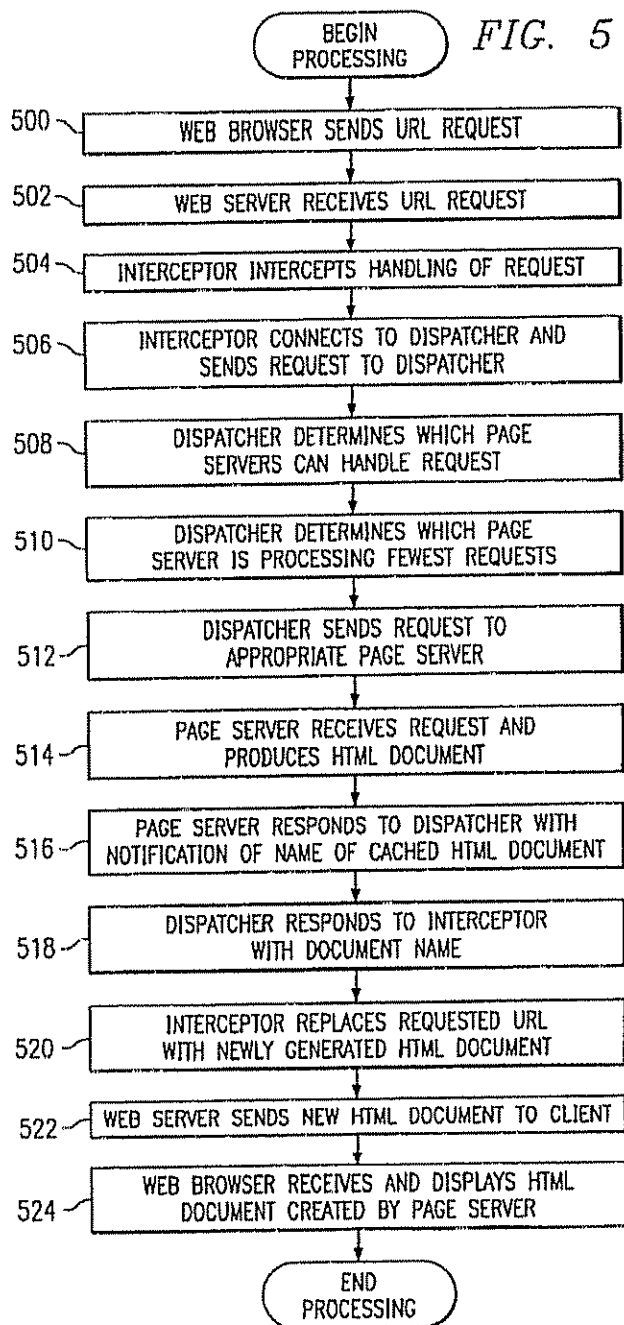


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SYSTEM AND METHOD FOR MANAGING DYNAMIC WEB PAGE GENERATION REQUESTS

This application is a division of Ser. No. 08/636,477, filed Apr. 23, 1996, now U.S. Pat. No. 5,894,554.

FIELD OF THE INVENTION

The present invention relates to the field of Internet technology. Specifically, the present invention relates to the creation and management of custom World Wide Web sites.

DESCRIPTION OF RELATED ART

The World Wide Web (the Web) represents all of the computers on the Internet that offer users access to information on the Internet via interactive documents or Web pages. These Web pages contain hypertext links that are used to connect any combination of graphics, audio, video and text, in a non-linear, non-sequential manner. Hypertext links are created using a special software language known as Hypertext Mark-Up Language (HTML).

Once created, Web pages reside on the Web, on Web servers or Web sites. A Web site can contain numerous Web pages. Web client machines running Web browsers can access these Web pages at Web sites via a communications protocol known as Hypertext Transport Protocol (HTTP). Web browsers are software interfaces that run on World Wide Web clients to allow access to Web sites via a simple user interface. A Web browser allows a Web client to request a particular Web page from a Web site by specifying a Uniform Resource Locator (URL). A URL is a Web address that identifies the Web page and its location on the Web. When the appropriate Web site receives the URL, the Web page corresponding to the requested URL is located, and if required, HTML output is generated. The HTML output is then sent via HTTP to the client for formatting on the client's screen.

Although Web pages and Web sites are extremely simple to create, the proliferation of Web sites on the Internet highlighted a number of problems. The scope and ability of a Web page designer to change the content of the Web page was limited by the static nature of Web pages. Once created, a Web page remained static until it was manually modified. This in turn limited the ability of Web site managers to effectively manage their Web sites.

The Common Gateway Interface (CGI) standard was developed to resolve the problem of allowing dynamic content to be included in Web pages. CGI "calls" or procedures enable applications to generate dynamically created HTML output, thus creating Web pages with dynamic content. Once created, these CGI applications do not have to be modified in order to retrieve "new" or dynamic data. Instead, when the Web page is invoked, CGI "calls" or procedures are used to dynamically retrieve the necessary data and to generate a Web page.

CGI applications also enhanced the ability of Web site administrators to manage Web sites. Administrators no longer have to constantly update static Web pages. A number of vendors have developed tools for CGI based development, to address the issue of dynamic Web page generation. Companies like Spider™ and Bluestone™, for example, have each created development tools for CGI-based Web page development. Another company, Hahl Software™, has developed a Web page generation tool that uses a BASIC-like scripting language, instead of a CGI scripting language.

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Tools that generate CGI applications do not, however, resolve the problem of managing numerous Web pages and requests at a Web site. For example, a single company may maintain hundreds of Web pages at their Web site. Current Web server architecture also does not allow the Web server to efficiently manage the Web page and process Web client requests. Managing these hundreds of Web pages in a coherent manner and processing all requests for access to the Web pages is thus a difficult task. Existing development tools are limited in their capabilities to facilitate dynamic Web page generation, and do not address the issue of managing Web requests or Web sites.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a method and apparatus for creating and managing custom Web sites. Specifically, the present invention claims a method and apparatus for managing dynamic web page generation requests.

In one embodiment, the present invention claims a computer-implemented method for managing a dynamic Web page generation request to a Web server, the computer-implemented method comprising the steps of routing the request from the Web server to a page server, the page server receiving the request and releasing the Web server to process other requests, processing the request, the processing being performed by the page server concurrently with the Web server, as the Web server processes the other requests, and dynamically generating a Web page in response to the request, the Web page including data dynamically retrieved from one or more data sources. Other embodiments also include connection caches to the one or more data sources, page caches for each page server, and custom HTML extension templates for configuring the Web page.

Other objects, features and advantages of the present invention will be apparent from the accompanying drawings and from the detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a typical computer system in which the present invention operates.

FIG. 2 illustrates a typical prior art Web server environment.

FIG. 3 illustrates a typical prior art Web server environment in the form of a flow diagram.

FIG. 4 illustrates one embodiment of the presently claimed invention.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram according to one embodiment of the presently claimed invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to a method and apparatus for creating and managing custom Web sites. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent to one of ordinary skill in the art, however, that these specific details need not be used to practice the present invention. In other instances, well-known structures, interfaces and processes have not been shown in detail in order not to unnecessarily obscure the present invention.

FIG. 1 illustrates a typical computer system 100 in which the present invention operates. The preferred embodiment of

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the present invention is implemented on an IBM™ Personal Computer manufactured by IBM Corporation of Armonk, New York. An alternate embodiment may be implemented on an RS/6000™ Workstation manufactured by IBM Corporation of Armonk, New York. It will be apparent to those of ordinary skill in the art that other computer system architectures may also be employed.

In general, such computer systems as illustrated by FIG 1 comprise a bus 101 for communicating information, a processor 102 coupled with the bus 101 for processing information, main memory 103 coupled with the bus 101 for storing information and instructions for the processor 102, a read-only memory 104 coupled with the bus 101 for storing static information and instructions for the processor 102, a display device 105 coupled with the bus 101 for displaying information for a computer user, an input device 106 coupled with the bus 101 for communicating information and command selections to the processor 102, and a mass storage device 107, such as a magnetic disk and associated disk drive, coupled with the bus 101 for storing information and instructions. A data storage medium 108 containing digital information is configured to operate with mass storage device 107 to allow processor 102 access to the digital information on data storage medium 108 via bus 101.

Processor 102 may be any of a wide variety of general purpose processors or microprocessors such as the Pentium™ microprocessor manufactured by Intel™ Corporation or the RS/6000™ processor manufactured by IBM Corporation. It will be apparent to those of ordinary skill in the art, however, that other varieties of processors may also be used in a particular computer system. Display device 105 may be a liquid crystal device, cathode ray tube (CRT), or other suitable display device. Mass storage device 107 may be a conventional hard disk drive, floppy disk drive, CD-ROM drive, or other magnetic or optical data storage device for reading and writing information stored on a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium. Data storage medium 108 may be a hard disk, a floppy disk, a CD-ROM, a magnetic tape, or other magnetic or optical data storage medium.

In general, processor 102 retrieves processing instructions and data from a data storage medium 108 using mass storage device 107 and downloads this information into random access memory 103 for execution. Processor 102, then executes an instruction stream from random access memory 103 or read-only memory 104. Command selections and information input at input device 106 are used to direct the flow of instructions executed by processor 102. Equivalent input device 106 may also be a pointing device such as a conventional mouse or trackball device. The results of this processing execution are then displayed on display device 105.

The preferred embodiment of the present invention is implemented as a software module, which may be executed on a computer system such as computer system 100 in a conventional manner. Using well known techniques, the application software of the preferred embodiment is stored on data storage medium 108 and subsequently loaded into and executed within computer system 100. Once initiated, the software of the preferred embodiment operates in the manner described below.

FIG. 2 illustrates a typical prior art Web server environment. Web client 200 can make URL requests to Web server 201 or Web server 202. Web servers 201 and 202 include Web server executables, 201(E) and 202(E) respectively,

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that perform the processing of Web client requests. Each Web server may have a number of Web pages 201(1)-(n) and 202(1)-(n). Depending on the URL specified by the Web client 200, the request may be routed by either Web server executable 201(E) in Web page 201 (1), for example, or from Web server executable 202(E) to Web page 202 (1). Web client 200 can continue making URL requests to retrieve other Web pages. Web client 200 can also use hyperlinks within each Web page to "jump" to other Web pages or to other locations within the same Web page.

FIG. 3 illustrates this prior art Web server environment in the form of a flow diagram. In processing block 300, the Web client makes a URL request. This URL request is examined by the Web browser to determine the appropriate Web server to route the request to in processing block 302. In processing block 304 the request is then transmitted from the Web browser to the appropriate Web server, and in processing block 306 the Web server executable examines the URL to determine whether it is a HTML document or a CGI application. If the request is for an HTML document 308, then the Web server executable locates the document in processing block 310. The document is then transmitted back through the requesting Web browser for formatting and display in processing block 312.

If the URL request is for a CGI application 314, however, the Web server executable locates the CGI application in processing block 316. The CGI application then executes and outputs HTML output in processing block 318 and finally the HTML output is transmitted back to requesting Web browser for formatting and display in processing block 320.

This prior art Web server environment does not, however, provide any mechanism for managing the Web requests or the Web sites. As Web sites grow, and as the number of Web clients and requests increase, Web site management becomes a crucial need.

For example, a large Web site may receive thousands of requests or "hits" in a single day. Current Web servers process each of these requests on a single machine, namely the Web server machine. Although these machines may be running "multi-threaded" operating systems that allow transactions to be processed by independent "threads," all the threads are nevertheless on a single machine, sharing a processor. As such, the Web executable thread may hand off a request to a processing thread, but both threads will still have to be handled by the processor on the Web server machine. When numerous requests are being simultaneously processed by multiple threads on a single machine, the Web server can slow down significantly and become highly inefficient. The claimed invention addresses this need by utilizing a partitioned architecture to facilitate the creation and management of custom Web sites and servers.

FIG. 4 illustrates one embodiment of the presently claimed invention. Web client 200 issues a URL request that is processed to determine proper routing. In this embodiment, the request is routed to Web server 201. Instead of Web server executable 201(E) processing the URL request, however, Interceptor 400 intercepts the request and routes it to Dispatcher 402. In one embodiment, Interceptor 400 resides on the Web server machine as an extension to Web server 201. This embodiment is appropriate for Web servers such as Netsite™ from Netscape, that support such extensions. A number of public domain Web servers, such as NCSA™ from the National Center for Supercomputing Applications at the University of Illinois, Urbana-Champaign, however, do not provide support for

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this type of extension. Thus, in an alternate embodiment, Interceptor 400 is an independent module, connected via an "intermediate program" to Web server 201. This intermediate program can be a simple CGI application program that connects Interceptor 400 to Web server 201. Alternate intermediate programs that perform the same functionality can also be implemented.

In one embodiment of the invention, Dispatcher 402 resides on a different machine than Web server 201. This embodiment overcomes the limitation described above, in prior art Web servers, wherein all processing is performed by the processor on a single machine. By routing the request to Dispatcher 402 residing on a different machine than the Web server executable 201(E), the request can then be processed by a different processor than the Web server executable 201(E). Web server executable 201(E) is thus free to continue servicing client requests on Web server 201 while the request is processed "off-line," at the machine on which Dispatcher 402 resides.

Dispatcher 402 can, however, also reside on the same machine as the Web server. The Web site administrator has the option of configuring Dispatcher 402 on the same machine as Web server 201, taking into account a variety of factors pertinent to a particular Web site, such as the size of the Web site, the number of Web pages and the number of hits at the Web site. Although this embodiment will not enjoy the advantage described above, namely off-loading the processing of Web requests from the Web server machine, the embodiment does allow flexibility for a small Web site to grow. For example, a small Web site administrator can use a single machine for both Dispatcher 402 and Web server 201 initially, then off-load Dispatcher 402 onto a separate machine as the Web site grows. The Web site can thus take advantage of other features of the present invention regardless of whether the site has separate machines configured as Web servers and dispatchers.

Dispatcher 402 receives the intercepted request and then dispatches the request to one of a number of Page servers 404(1)-(n). For example, if Page server 404(1) receives the dispatched request, it processes the request and retrieves the data from an appropriate data source, such as data source 406, data source 408, or data source 410. Data sources, as used in the present application, include databases, spreadsheets, files and any other type of data repository. Page server 404(1) can retrieve data from more than one data source and incorporate the data from these multiple data sources in a single Web page.

In one embodiment, each Page server 404(1)-(n) resides on a separate machine on the network to distribute the processing of the request. Dispatcher 402 maintains a variety of information regarding each Page server on the network, and dispatches requests based on this information. For example, Dispatcher 402 retains dynamic information regarding the data sources that any given Page server can access. Dispatcher 402 thus examines a particular request and determines which Page servers can service the URL request. Dispatcher 402 then hands off the request to the appropriate Page server.

For example, if the URL request requires financial data from data source 408, dispatcher 402 will first examine an information list. Dispatcher 402 may determine that Page server 404(3), for example, has access to the requisite data in data source 408. Dispatcher 402 will thus route the URL request to Page server 404(3). This "connection caching" functionality is described in more detail below, under the heading "Performance." Alternately, Dispatcher 402 also

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has the ability to determine whether a particular Page server already has the necessary data cached in the Page server's page cache (described in more detail below, under the heading "Performance"). Dispatcher 402 may thus determine that Page server 404(1) and 404(2) are both logged into Data source 408, but that Page server 404(2) has the financial information already cached in Page server 404(2)'s page cache. In this case, Dispatcher 402 will route the URL request to Page server 404(2) to more efficiently process the request.

Finally, Dispatcher 402 may determine that a number of all Page servers 404(1)-(n) are logged into Data source 408. In this scenario, Dispatcher 402 can examine the number of requests that each Page server is servicing and route the request to the least busy page server. This "load balancing" capability can significantly increase performance at a busy Web site and is discussed in more detail below, under the heading "Scalability."

If, for example, Page server 404(2), receives the request, Page server 404(2) will process the request. While Page server 404(2) is processing the request, Web server executable 201(E) can concurrently process other Web client requests. This partitioned architecture thus allows both Page server 404(2) and Web server executable 201(E) to simultaneously process different requests, thus increasing the efficiency of the Web site. Page server 404(2) dynamically generates a Web page in response to the Web client request, and the dynamic Web page is then either transmitted back to requesting Web client 200 or stored on a machine that is accessible to Web server 201, for later retrieval.

One embodiment of the claimed invention also provides a Web page designer with HTML extensions, or "dyna" tags. These dyna tags provide customized HTML functionality to a Web page designer, to allow the designer to build customized HTML templates that specify the source and placement of retrieved data. For example, in one embodiment, a "dynatext" HTML extension tag specifies a data source and a column name to allow the HTML template to identify the data source to log into and the column name from which to retrieve data. Alternatively, "dyna-anchor" tags allow the designer to build hyperlink queries while "dynablock" tags provide the designer with the ability to iterate through blocks of data. Page servers use these HTML templates to create dynamic Web pages. Then, as described above, these dynamic Web pages are either transmitted back to requesting Web client 200 or stored on a machine that is accessible in Web server 201, for later retrieval.

The presently claimed invention provides numerous advantages over prior art Web servers, including advantages in the areas of performance, security, extensibility and scalability.

Performance

One embodiment of the claimed invention utilizes connection caching and page caching to improve performance. Each Page server can be configured to maintain a cache of connections to numerous data sources. For example, as illustrated in FIG. 4, Page server 404(1) can retrieve data from data source 406, data source 408 or data source 410. Page server 404(1) can maintain connection cache 412(1), containing connections to each of data source 406, data source 408 and data source 410, thus eliminating connection times from the Page servers to those data sources.

Additionally, another embodiment of the present invention supports the caching of finished Web pages, to optimize the performance of the data source being utilized. This "page

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caching" feature, illustrated in FIG. 4 as Page cache 414, allows the Web site administrator to optimize the performance of data sources by caching Web pages that are repeatedly accessed. Once the Web page is cached, subsequent requests or "hits" will utilize the cached Web page rather than re-accessing the data source. This can radically improve the performance of the data source.

Security

The present invention allows the Web site administrator to utilize multiple levels of security to manage the Web site. In one embodiment, the Page server can utilize all standard encryption and site security features provided by the Web server. In another embodiment, the Page server can be configured to bypass connection caches 412(1)-(n), described above, for a particular data source and to require entry of a user-supplied identification and password for the particular data source the user is trying to access.

Additionally, another embodiment of the presently claimed invention requires no real-time access of data sources. The Web page caching ability, described above, enables additional security for those sites that want to publish non-interactive content from internal information systems, but do not want real-time Internet accessibility to those internal information systems. In this instance, the Page server can act as a "replication and staging agent" and create Web pages in batches, rather than in real-time. These "replicated" Web pages are then "staged" for access at a later time, and access to the Web pages in this scenario is possible even if the Page server and dispatcher are not present later.

In yet another embodiment, the Page server can make a single pass through a Web library, and compile a Web site that exists in the traditional form of separately available files. A Web library is a collection of related Web books and Web pages. More specifically, the Web library is a hierarchical organization of Web document templates, together with all the associated data source information. Information about an entire Web site is thus contained in a single physical file, thus simplifying the problem of deploying Web sites across multiple Page servers. The process of deploying the Web site in this embodiment is essentially a simple copy of a single file.

Extensibility

One embodiment of the present invention provides the Web site administrator with Object Linking and Embedding (OLE) 2.0 extensions to extend the page creation process. These OLE 2.0 extensions also allow information submitted over the Web to be processed with user-supplied functionality. Utilizing development tools such as Visual Basic, Visual C++ or PowerBuilder that support the creation of OLE 2.0 automation, the Web site administrator can add features and modify the behavior of the Page servers described above. This extensibility allows one embodiment of the claimed invention to be incorporated with existing technology to develop an infinite number of custom web servers.

For example, OLE 2.0 extensions allow a Web site administrator to encapsulate existing business rules in an OLE 2.0 automation interface, to be accessed over the Web. One example of a business rule is the steps involved in the payoff on an installment or mortgage loan. The payoff may involve, for example, taking into account the current balance, the date and the interest accrued since the last payment. Most organizations already have this type of business rule implemented using various applications, such

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as Visual Basic for client-server environments, or CICS programs on mainframes. If these applications are OLE 2.0 compliant, the Page server "dynamobject" HTML extension tag can be used to encapsulate the application in an OLE 2.0 automation interface. The Page server is thus extensible, and can incorporate the existing application with the new Page server functionality.

Scalability

One embodiment of the claimed invention allows "plug and play" scalability. As described above, referring to FIG. 4, Dispatcher 402 maintains information about all the Page servers configured to be serviced by Dispatcher 402. Any number of Page servers can thus be "plugged" into the configuration illustrated in FIG. 4, and the Page servers will be instantly activated as the information is dynamically updated in Dispatcher 402. The Web site administrator can thus manage the overhead of each Page server and modify each Page server's load, as necessary, to improve performance. In this manner, each Page server will cooperate with other Page servers within a multi-server environment. Dispatcher 402 can examine the load on each Page server and route new requests according to each Page server's available resources. This "load-balancing" across multiple Page servers can significantly increase a Web site's performance.

FIG. 5 illustrates the processing of a Web browser request in the form of a flow diagram, according to one embodiment of the presently claimed invention. A Web browser sends a URL request to a Web server in processing block 500. In processing block 502, the Web server receives the URL request, and an interceptor then intercepts the handling of the request in processing block 504. The interceptor connects to a dispatcher and sends the URL request to the dispatcher in processing block 506. In processing block 508, the dispatcher determines which Page servers can handle the request. The dispatcher also determines which Page server is processing the fewest requests in processing block 510, and in processing block 512, the dispatcher sends the URL request to an appropriate Page server. The Page server receives the request and produces an HTML document in processing block 514. The Page server then responds to the dispatcher with notification of the name of the cached HTML document in processing block 516. In processing block 518, the dispatcher responds to the interceptor with the document name, and the interceptor then replaces the requested URL with the newly generated HTML document in processing block 520. The Web server then sends the new HTML document to the requesting client in processing block 522. Finally, the Web browser receives and displays the HTML document created by the Page server at processing block 524.

Thus, a method and apparatus for creating and managing custom Web sites is disclosed. These specific arrangements and methods described herein are merely illustrative of the principles of the present invention. Numerous modifications in form and detail may be made by those of ordinary skill in the art without departing from the scope of the present invention. Although this invention has been shown in relation to a particular preferred embodiment, it should not be considered so limited. Rather, the present invention is limited only by the scope of the appended claims.

We claim:

1. A computer-implemented method for managing a dynamic Web page generation request to a Web server, said computer-implemented method comprising the steps of:
 routing a request from a Web server to a page server, said page server receiving said request and releasing said

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Web server to process other requests wherein said routing step further includes the steps of:

intercepting said request at said Web server and routing said request to said page server;

processing said request, said processing being performed by said page server while said Web server concurrently processes said other requests; and dynamically generating a Web page in response to said request, said Web page including data dynamically retrieved from one or more data sources

2 The computer-implemented method in claim 1 wherein said step of routing said request includes the steps of:

routing said request from said Web server to a dispatcher; and

dispatching said request to said page server.

3 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data

4 The computer-implemented method in claim 1 wherein said step of dynamically generating said Web page includes the step of dynamically retrieving said data from said one or more data sources

5 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources

6 The computer-implemented method in claim 1 wherein said step of processing said request includes the step of logging into said one or more data sources

7 The computer-implemented method in claim 1 wherein said step of dynamically generating said Web page includes the step of maintaining a page cache containing said Web page

8 The computer-implemented method in claim 1 wherein said page server includes tag-based text templates for configuring said Web page

9 The computer-implemented method in claim 8 wherein said step of processing said request further includes the step of inserting said dynamically retrieved data from said one or more data sources into said tag-based text templates

10 The computer-implemented method in claim 8 wherein at least one of said tag-based text templates drives a format of the data dynamically retrieved from said one or more data sources in response to said request

11 The computer-implemented method in claim 8 wherein said tag-based text templates include HTML templates

12 The computer-implemented method in claim 1 wherein said step of processing said request further includes the step of dynamically updating data at said one or more data sources

13 The computer-implemented method in claim 1 wherein said step of processing said request further includes the step of processing an object handling extension

14 The computer-implemented method in claim 13 wherein said object handling extension is an OLE extension

15 A computer-implemented method comprising the steps of:

transferring a request from an HTTP-compliant device to a page server, said page server receiving said request and releasing said HTTP-compliant device to process other requests wherein said transferring step further includes the steps of:

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intercepting said request at said HTTP-compliant device and transferring said request to said page server;

processing said request, said processing being performed by said page server while said HTTP-compliant device concurrently processes said other requests; and

dynamically generating a page in response to said request, said page including data dynamically retrieved from one or more data sources.

16 The computer-implemented method in claim 15 wherein said step of transferring said request includes the steps of:

transferring said request from said HTTP-compliant device to a dispatcher; and

dispatching said request to said page server.

17 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of identifying said one or more data sources from which to retrieve said data

18 The computer-implemented method in claim 15 wherein said step of dynamically generating said page includes the step of dynamically retrieving said data from said one or more data sources

19 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of said page server maintaining a connection cache to said one or more data sources

20 The computer-implemented method in claim 15 wherein said step of processing said request includes the step of logging into said one or more data sources

21 The computer-implemented method in claim 15 wherein said step of dynamically generating said page includes the step of maintaining a page cache containing said page

22 The computer-implemented method in claim 15 wherein said page server includes tag-based text templates for configuring said page

23 The computer-implemented method in claim 22 wherein said step of processing said request further includes the step of inserting said dynamically retrieved data from said one or more data sources into said tag-based text templates

24 The computer-implemented method in claim 22 wherein at least one of said tag-based text templates drives a format of the data dynamically retrieved from said one or more data sources in response to said request

25 The computer-implemented method in claim 22 wherein said tag-based text templates include HTML templates

26 The computer-implemented method in claim 15 wherein said step of processing said request further includes the step of dynamically updating data at said one or more data sources

27 The computer-implemented method in claim 15 wherein said step of processing said request further includes the step of processing an object handling extension

28 The computer-implemented method in claim 27 wherein said object handling extension is an OLE extension

29 A computer-implemented method comprising the steps of:

transferring a request from an HTTP-compliant device to a dispatcher;

maintaining dynamic information regarding data sources a given page server may access;

dispatching said request to an appropriate page server based on said request and based on said dynamic information, said page server receiving said request and

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releasing said HTTP-compliant device to process other requests;
processing said request, said processing being performed by said page server while said HTTP-compliant device concurrently processes said other requests; and

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dynamically generating a page in response to said request, said page including data dynamically retrieved from one or more data sources

* * * * *

EXHIBIT C

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BY ELECTRONIC MAIL

Re: *EpicRealm Licensing, LLC v. Autoflex, et al., and EpicRealm Licensing, LLC v. Franklin Covey, et al.*; Case Nos. 2:05CV00163-DF, and 2:05CV00356-DF (consolidated); in the United States District Court for the Eastern District of Texas, Marshall Division

Dear Charles:

This is in response to your letter of January 24.

Our pre-suit investigation for Clark Consulting, Inc. focused on the website www.clarkconsulting.com. Header responses and other information available to us established that in responding to requests received by this website for webpages containing dynamic content, Clark generated such pages using Apache and Tomcat servers configured in a manner that infringed claims of the epicRealm patents.

In your January 24, letter, you advise us of three additional websites that Clark owns and operates that you claim use IIS server software as opposed to Apache and/or Tomcat servers.* In your letter, you ask whether the systems and methods employed by these websites for managing dynamic webpage generation requests infringe the epicRealm patents. We are not in a position at this time to provide you with a definitive answers to that question. There are a couple of reasons why that is so. First, as mentioned above, our pre-suit investigation focused on www.clarkconsulting.com, and header responses generated by that website consistently identified Apache and Tomcat servers and never identified any IIS servers. Second, unlike the open source Apache and Tomcat software, which is in the public domain, IIS server software is proprietary and not publicly available.

* You appear to have an incorrect URL for the first such site. We believe the correct URL is <http://surveys.clarkconsulting.com/login-verification.asp>. The website you identify – <http://www.clarkconsulting.com/services/surveys/sechips/index.shtml>, – generates a header response that identifies Apache and Tomcat server software.



BAKER BOTTS LLP

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January 25, 2006

The contention in the first page of your letter that only systems that utilize Apache and/or Tomcat web server software or their equivalent can infringe the epicRealm patents is incorrect. Certainly, a system or method that employs IIS service software instead of Apache or Tomcat servers could, if used to generate webpages with dynamic content, be configured in a way that would infringe the claims of the epicRealm patents.

In response to your question whether Clark is "required to provide [epicRealm] disclosures with regard to web-sites that are IIS software servers only," we believe the answer is Yes. Such disclosures, in particular a complete and full document production, should answer the infringement issue.

As I stated in our brief phone conversation this afternoon, it is not true that other defendants have requested an extension of time until February 16 to respond to our request for production. No defendant has made such a request. In our phone conversation, you made such a request on behalf of all defendants. I am not inclined to agree. The reason is that we originally served our document request on the Autoflex defendants by letter dated June 24, 2005, and on the Franklin Covey defendants (including you) by letter dated September 23, 2005. The Autoflex defendants have had more than seven months to gather these documents for production. The Franklin Covey defendants (including you) have had more than four months. That seems like plenty of time.

Charles, if you have any questions, please give me a call.

Very truly yours,

Larry D. Carlson

Larry D. Carlson

by permission

Ryan Lovelace

LDC:ldm

JS-44 (Rev. 11/04)

CIVIL COVER SHEET

The JS-44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM.)

I. (a) PLAINTIFFS QuinStreet, Inc (b) County of Residence of First Listed Plaintiff <u>San Mateo County, CA</u> (EXCEPT IN U.S. PLAINTIFF CASES) (c) Attorney's (Firm Name, Address and Telephone Number) Robert H. Richards, III Jeffrey L. Moyer Anne Shea Garg Richards, Layton & Finger One Rodney Square 920 North King Street Wilmington, DE 19801 302-651-7700			DEFENDANTS epicRealm Licensing, LP County of Residence of First Listed Defendant <u>New Castle County, DE</u> (IN U.S. PLAINTIFF CASES ONLY) NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED Attorneys (If Known)																				
II. BASIS OF JURISDICTION (Place an "X" in One Box Only) <input type="checkbox"/> 1 U.S. Government Plaintiff <input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party) <input type="checkbox"/> 2 U.S. Government Defendant <input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)			III. CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant) <table style="width:100%; border: none;"> <tr> <td style="width: 33%;">Citizen of This State</td> <td style="width: 10%;">PTF <input type="checkbox"/> 1</td> <td style="width: 10%;">DEF <input type="checkbox"/> 1</td> <td style="width: 33%;">Incorporated or Principal Place of Business in This State</td> <td style="width: 10%;">PTF <input type="checkbox"/> 4</td> <td style="width: 10%;">DEF <input checked="" type="checkbox"/> 4</td> </tr> <tr> <td>Citizen of Another State</td> <td><input type="checkbox"/> 2</td> <td><input type="checkbox"/> 2</td> <td>Incorporated and Principal Place of Business in Another State</td> <td><input checked="" type="checkbox"/> 5</td> <td><input type="checkbox"/> 5</td> </tr> <tr> <td>Citizen or Subject of a Foreign Country</td> <td><input type="checkbox"/> 3</td> <td><input type="checkbox"/> 3</td> <td>Foreign Nation</td> <td><input type="checkbox"/> 6</td> <td><input type="checkbox"/> 6</td> </tr> </table>			Citizen of This State	PTF <input type="checkbox"/> 1	DEF <input type="checkbox"/> 1	Incorporated or Principal Place of Business in This State	PTF <input type="checkbox"/> 4	DEF <input checked="" type="checkbox"/> 4	Citizen of Another State	<input type="checkbox"/> 2	<input type="checkbox"/> 2	Incorporated and Principal Place of Business in Another State	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 5	Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation	<input type="checkbox"/> 6	<input type="checkbox"/> 6
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Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation	<input type="checkbox"/> 6	<input type="checkbox"/> 6																		
IV. NATURE OF SUIT (Place an "X" in One Box Only)																							
CONTRACT 110 Insurance 120 Marine 130 Miller Act 140 Negotiable Instrument 150 Recovery of Overpayment & Enforcement of Judgment 151 Medicare Act 152 Recovery of Defaulted Student Loans (excl. Veterans) 153 Recovery of Overpayment of Veteran's Benefits 160 Stockholder's Suits 190 Other Contract 195 Contract Product Liability 196 Franchise REAL PROPERTY 210 Land Condemnation 220 Foreclosure 230 Rent Lease & Eject 240 Easement 245 Tort Product Liability 290 All Other Real Property	PERSONAL INJURY 310 Airplane 315 Airplane Product Liability 320 Assault, Libel & Slander 330 Federal Employers Liability 340 Marine 345 Marine Product Liability 350 Motor Vehicle 355 Motor Vehicle Product Liability 360 Other Personal Injury CIVIL RIGHTS 411 Voting 442 Employment 443 Housing 444 Accommodations 444 Welfare 445 Amer. w/Disabilities - Employment 446 Amer. w/Disabilities - Other 448 Other Civil Rights	PERSONAL INJURY 362 Personal Injury - Med. Malpractice 365 Personal Injury - Product Liability 365 Asbestos Personal Injury Product Liability PERSONAL PROPERTY 370 Other Fraud 371 Truth in Lending 380 Other Personal Property Damage 385 Property Damage Product Liability PRISONER PETITIONS 510 Motions to Vacate Sentence Habeas Corpus: 530 General 535 Death Penalty 540 Mandamus & Other 550 Civil Rights 555 Prison Condition	FORFEITURE/PENALTY 610 Agriculture 620 Other Food & Drug 625 Drug Related Seizure of Property 21 USC 881 630 Liquor Laws 640 R.R. & Truck 650 Airline Regs. 660 Occupational Safety/Health 690 Other LABOR 710 Fair Labor Standards Act 720 Labor Mgmt. Relations 730 Labor Mgmt. Reporting & Disclosure Act 710 Railway Labor Act 790 Other Labor Litigation 791 Empl. Ret. Inc. Security Act	BANKRUPTCY 822 Appeal 26 USC 158 423 Withdrawal 26 USC 157 PROPERTY RIGHTS 820 Copyrights <input checked="" type="checkbox"/> 830 Patent 840 Trademark SOCIAL SECURITY 861 SSA (13950) 862 Black Lung (923) 863 DIWC DRWN (408(g)) 864 SSND Title XVI 865 RSI (408(p)) FEDERAL TAX SUITS 870 Taxes (U.S. Plaintiff or Defendant) 871 IRS - Third Party 26 USC 7609	OTHER STATUTES 400 State Reappointment <input type="checkbox"/> 110 Antitrust 430 Banks and Banking 450 Commerce 460 Deportation 470 Racketeer Influenced and Corrupt Organizations 480 Consumer Credit 490 Cable Sat. TV 610 Selective Service 850 Securities Commodities Exchange 875 Customer Challenge 12 USC 3410 890 Other Statutory Actions 891 Agricultural Acts 892 Economic Stabilization Act 893 Environmental Matters 894 Energy Allocation Act 895 Freedom of Information Act 900 Appeal of Fee Determination Under Equal Access to Justice 950 Constitutionality of State Statutes																		
V. ORIGIN (Place an "X" in One Box Only)																							
<input checked="" type="checkbox"/> Original Proceeding 2 Removed from State Court 3 Removed from Appellate Court 4 Reinstated or Reopened 5 Transferred from another district (specify) _____ 6 Multidistrict Litigation 7 Appeal to District Judge from Magistrate Justice																							
VI. CAUSE OF ACTION (Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity): 28 U.S.C. §§1331, 1338, 2201, 2202) Brief description of cause: Action under patent laws for declaratory judgment																							
VII. REQUESTED IN COMPLAINT																							
CHECK IF THIS IS A CLASS ACTION UNDER F.R.C.P. 23 <input type="checkbox"/> DEMAND \$ _____ CHECK YES only if demanded in complaint: JURY DEMAND: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																							
VIII. RELATED CASE(S) IF ANY (See instructions) JUDGE <u>Sue L. Robinson</u> DOCKET NUMBER <u>06-414</u>																							
DATE <u>August 8, 2006</u> SIGNATURE OF ATTORNEY OF RECORD <u>Anne Shea Garg</u>																							
FOR OFFICE USE ONLY: RECEIPT # _____ AMOUNT _____ APPLYING IF P _____ JUDGE _____ MAG. JUDGE _____																							

INSTRUCTIONS FOR ATTORNEYS COMPLETING CIVIL COVER SHEET FORM JS-44

Authority For Civil Cover Sheet

The JS-44 civil cover sheet and the information contained herein neither replaces nor supplements the filings and service of pleading or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. Consequently a civil cover sheet is submitted to the Clerk of Court for each civil complaint filed. The attorney filing a case should complete the form as follows:

I (a) **Plaintiffs - Defendants.** Enter names (last, first, middle initial) of plaintiff and defendant. If the plaintiff or defendant is a government agency, use only the full name or standard abbreviations. If the plaintiff or defendant is an official within a government agency, identify first the agency and then the official, giving both name and title.

(b) **County of Residence.** For each civil case filed, except U.S. plaintiff cases, enter the name of the county where the first listed plaintiff resides at the time of filing. In U.S. plaintiff cases, enter the name of the county in which the first listed defendant resides at the time of filing. (NOTE: In land condemnation cases, the county of residence of the "defendant" is the location of the tract of land involved.)

(c) **Attorneys.** Enter firm name, address, telephone number, and attorney of record. If there are several attorneys, list them on an attachment, noting in this section "(see attachment)".

II **Jurisdiction.** The basis of jurisdiction is set forth under Rule 8 (a), F.R.C.P., which requires that jurisdictions be shown in pleadings. Place an "X" in one of the boxes. If there is more than one basis of jurisdiction, precedence is given in the order shown below.

United States plaintiff (1) Jurisdiction is based on 28 U.S.C. 1345 and 1348. Suits by agencies and officers of the United States are included here.

United States defendant (2) When the plaintiff is suing the United States, its officers or agencies, place an X in this box.

Federal question (3) This refers to suits under 28 U.S.C. 1331, where jurisdiction arises under the Constitution of the United States, an amendment to the Constitution, an act of Congress or a treaty of the United States. In cases where the U.S. is a party, the U.S. plaintiff or defendant code takes precedence, and box 1 or 2 should be marked.

Diversity of citizenship (4) This refers to suits under 28 U.S.C. 1332, where parties are citizens of different states. When Box 4 is checked, the citizenship of the different parties must be checked. (See Section III below; federal question actions take precedence over diversity cases.)

III. **Residence (citizenship) of Principal Parties.** This section of the JS-44 is to be completed if diversity of citizenship was indicated above. Mark this section for each principal party.

IV **Cause of Action.** Report the civil statute directly related to the cause of action and give a brief description of the cause.

V **Nature of Suit.** Place an "X" in the appropriate box. If the nature of suit cannot be determined, be sure the cause of action in Section IV above is sufficient to enable the deputy clerk or the statistical clerks in the Administrative Office to determine the nature of suit. If the cause fits more than one nature of suit, select the most definitive.

VI **Origin.** Place an "X" in one of the seven boxes.

Original Proceedings (1) Cases which originate in the United States district courts.

Removed from State Court (2) Proceedings initiated in state courts may be removed to the district courts under Title 28 U.S.C. Section 1441. When the petition for removal is granted, check this box.

Remanded from Appellate Court (3) Check this box for cases remanded to the district court for further action. Use the date of remand as the filing date.

Reinstated or Reopened (4) Check this box for cases reinstated or reopened in the district court. Use the reopening date as the filing date.

Transferred from Another District (5) For cases transferred under Title 28 U.S.C. Section 1404(a). Do not use this for within district transfers or multidistrict litigation transfers.

Multidistrict Litigation (6) Check this box when a multidistrict case is transferred into the district under authority of Title 28 U.S.C. Section 1407. When this box is checked, do not check (5) above.

Appeal to District Judge from Magistrate Judgment (7) Check this box for an appeal from a magistrate's decision.

VII. **Requested In Complaint.** Class Action. Place an "X" in this box if you are filing a class action under Rule 23, F.R.C.P.

Demand. In this space enter the dollar amount (in thousands of dollars) being demanded or indicate other demand such as a preliminary injunction.

Jury Demand. Check the appropriate box to indicate whether or not a jury is being demanded.

VIII. **Related Cases.** This section of the JS-44 is used to reference relating pending cases, if any. If there are related pending cases, insert the docket numbers and the corresponding judge names for such cases.

Date and Attorney Signature. Date and sign the civil cover sheet.
(rev. 07/89)

AO FORM 85 RECEIPT (REV. 9/04)

United States District Court for the District of Delaware

Civil Action No. 195

ACKNOWLEDGMENT
OF RECEIPT FOR AO FORM 85

NOTICE OF AVAILABILITY OF A
UNITED STATES MAGISTRATE JUDGE
TO EXERCISE JURISDICTION

I HEREBY ACKNOWLEDGE RECEIPT OF 2 COPIES OF AO FORM 85.

8-8-06

(Date forms issued)

J. Schnatter

(Signature of Party or their Representative)

J. SCHNATTER

(Printed name of Party or their Representative)

Note: Completed receipt will be filed in the Civil Action

EXHIBIT E

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

QUINSTREET, INC.,)	
)	
Plaintiff,)	
)	
v.)	C. A. No. 06-495-SLR
)	
EPICREALM LICENSING, LP,)	
)	
Defendant.)	

**DEFENDANT EPICREALM LICENSING, LP'S
ANSWER AND COUNTERCLAIM**

Defendant epicRealm Licensing, LP ("epicRealm") respectfully files its Answer and Counterclaim to Plaintiff QuinStreet, Inc.'s ("QuinStreet") Complaint for Declaratory Judgment ("Complaint").

THE PARTIES

1. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 1 of QuinStreet's Complaint.

2. EpicRealm admits that it is a Delaware limited partnership. EpicRealm denies that its principal place of business is at 558 S. Central Expressway, Richardson, Texas 75080-6126. EpicRealm's principal place of business is in Dallas, Dallas County, Texas.

JURISDICTION AND VENUE

3. EpicRealm admits the allegations of paragraph 3 of QuinStreet's Complaint.

4. EpicRealm admits the allegations of paragraph 4 of QuinStreet's Complaint.

5. EpicRealm admits the allegations of paragraph 5 of QuinStreet's Complaint.

ALLEGATIONS RELATED TO ALL COUNTS

6. EpicRealm admits the allegations of paragraph 6 of QuinStreet's Complaint.

7. EpicRealm admits the allegations of paragraph 7 of QuinStreet's Complaint.

8. EpicRealm admits the allegations of paragraph 8 of QuinStreet's Complaint.

9. EpicRealm admits the allegations of paragraph 9 of QuinStreet's Complaint.

10. EpicRealm admits the allegations of paragraph 10 of QuinStreet's Complaint.

11. EpicRealm admits the allegations of paragraph 11 of QuinStreet's Complaint.

12. EpicRealm admits the allegations of paragraph 12 of QuinStreet's Complaint.

13. EpicRealm admits the allegations of paragraph 13 of QuinStreet's Complaint.

14. EpicRealm admits the allegations of paragraph 14 of QuinStreet's Complaint.

15. EpicRealm admits the allegations of paragraph 15 of QuinStreet's Complaint.

16. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 16 of QuinStreet's Complaint.

17. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 17 of QuinStreet's Complaint.

18. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 18 of QuinStreet's Complaint.

19. EpicRealm denies that QuinStreet has properly and fully summarized epicRealm's claims in the '356 action.

20. EpicRealm denies the allegations of paragraph 20 of QuinStreet's Complaint to the extent that paragraph 20 incorporates allegations from paragraph 19 of QuinStreet's Complaint. EpicRealm admits that its counsel sent the letter attached as Exhibit C to QuinStreet's Complaint.

21. EpicRealm admits that it has requested discovery from Herbalife regarding the systems and methods used to generate dynamic web pages on Herbalife's websites. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations of paragraph 21 of QuinStreet's Complaint.

22. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 22 of QuinStreet's Complaint.

23. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph 23 of QuinStreet's Complaint.

FIRST COUNT: NONINFRINGEMENT

24. EpicRealm reasserts its answers to paragraphs 1-23 of QuinStreet's Complaint.

25. EpicRealm admits that an actual controversy exists between QuinStreet and epicRealm. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations of paragraph 25 of QuinStreet's Complaint.

26. EpicRealm denies the allegations of paragraph 26 of QuinStreet's Complaint.

27. EpicRealm admits that an actual controversy exists between QuinStreet and epicRealm. EpicRealm denies QuinStreet's claims of noninfringement.

SECOND COUNT: INVALIDITY

28. EpicRealm reasserts its answers to paragraphs 1-27 of QuinStreet's Complaint.

29. EpicRealm admits that an actual controversy exists between QuinStreet and epicRealm. EpicRealm lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations of paragraph 29 of QuinStreet's Complaint.

30. EpicRealm denies the allegations of paragraph 30 of QuinStreet's Complaint.

31. EpicRealm admits that an actual controversy exists between QuinStreet and epicRealm. EpicRealm denies QuinStreet's claims of invalidity.

32. In response to QuinStreet's Prayer, epicRealm denies that QuinStreet is entitled to relief of any kind.

COUNTERCLAIM

EpicRealm counterclaims against QuinStreet for patent infringement and alleges the following:

33. EpicRealm reasserts its answers to paragraphs 1-31 of QuinStreet's Complaint.

34. The Court has jurisdiction over this Counterclaim pursuant to 28 U.S.C. §§ 1331 and 1338.

35. The Court has personal jurisdiction over QuinStreet by virtue of its commencing this action against epicRealm in this Court.

36. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b), (c) and 1400(b).

PATENT INFRINGEMENT

37. On April 13, 1999, and July 2, 2002, United States Patent Nos. 5,894,554 and 6,415,335 B1, which are collectively referred to as the "epicRealm Patents," duly and legally issued. These two patents concern, among other things, systems and methods for managing dynamic Web page generation requests. Copies of the epicRealm Patents are attached hereto as Exhibits "A" and "B" and made a part hereof.

38. EpicRealm is the owner of the epicRealm Patents and has the right to enforce those patents with respect to QuinStreet.

39. On information and belief, QuinStreet makes, uses, offers for sale, sells, imports, and/or induces the use of systems and methods for managing dynamic Web page generation requests within the scope of one or more of the claims of the epicRealm Patents. As a result, QuinStreet has been and still is infringing one or more of the claims

of the epicRealm Patents as defined by 35 U.S.C. § 271 (a), (b), and/or (c). EpicRealm has suffered damage by reason of QuinStreet's infringement and will continue to suffer additional damage until this Court enjoins the infringing conduct.

40. To the extent that QuinStreet has continued or does continue its infringing activities after receiving notice of the epicRealm Patents, such infringement is willful, entitling epicRealm to the recovery of increased damages under 35 U.S.C. § 284.

41. This is an "exceptional case" justifying an award of attorneys' fees and costs to epicRealm pursuant to 35 U.S.C. § 285.

42. EpicRealm believes that QuinStreet will continue to infringe the epicRealm Patents unless enjoined by this Court. Such infringing activity causes epicRealm irreparable harm and will continue to cause such harm without the issuance of an injunction.

JURY DEMAND

43. EpicRealm requests trial by jury pursuant to Federal Rule of Civil Procedure 38.

PRAYER FOR RELIEF

EpicRealm requests that the Court find in its favor and against QuinStreet and that the Court grant the following relief:

- a. Judgment that one or more of the claims of the epicRealm Patents have been infringed, either literally and/or under the doctrine of equivalents, by QuinStreet;
- b. Judgment in favor of epicRealm for the full amount of its actual damages caused by QuinStreet's infringing activities, including an assessment of interest and costs;
- c. Judgment for increased damages for willful infringement pursuant to 35 U.S.C. § 284;

- d. Judgment that this is an "exceptional case" and awarding epicRealm its reasonable attorneys' fees and costs pursuant to 35 U.S.C. § 285;
- e. That QuinStreet be permanently enjoined from further activity or conduct that infringes the claims of the epicRealm Patents; and
- f. That the Court award epicRealm such other and further relief as is just and proper under the circumstances.

POTTER ANDERSON & CORROON LLP

OF COUNSEL:

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Kevin J. Meek
Jeff Moles
BAKER BOTTS, L.L.P.
2001 Ross Avenue
Dallas, TX 75201
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Dated: April 13, 2007

788984 / 31393

By: /s/ Richard L. Horwitz

Richard L. Horwitz (#2246)

David E. Moore (#3983)

Hercules Plaza, 6th Floor

1313 N. Market Street

Wilmington, DE 19899

Tel: (302) 984-6000

Fax: (302) 658-1192

rhorwitz@potteranderson.com

dmoore@potteranderson.com

*Attorneys for Defendant
epicRealm Licensing, LP*

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I, Richard L. Horwitz, hereby certify that on April 13, 2007, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading:

Robert H. Richards, III
Jeffrey L. Moyer
Anne Shea Gaza
Richards, Layton & Finger
One Rodney Square
920 N. King Street
Wilmington, DE 19899

I hereby certify that on April 13, 2007, I have Electronically Mailed the documents to the following:

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dmoore@potteranderson.com

EXHIBIT F

F

=====

1
2
3
4
5
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7
8

1-70TWBP

1-70TWBS

Volume Licensing Customer,

Welcome to the Microsoft Volume Licensing Program. Enclosed is your copy of your new Volume Licensing Agreement with Microsoft, which is now in effect with your company.

By now you should have received an email notification from Microsoft regarding acceptance of the terms and conditions of your Volume Licensing Agreement. The email notification contains current contract information such as licensing pools, participant contact information, and more.

In addition to the electronic email acceptance letter, you should have received a second email from Microsoft with information regarding an online resource for Microsoft Volume Licensing customers. This Web resource, called Microsoft Volume Licensing Services (MVLS), contains detailed and confidential information regarding your Microsoft Volume Licensing account, including transaction history, product downloads, and Volume Licensing Product Keys.

If you have not received your electronic acceptance notification or MVLS instructions, please contact your Large Account Reseller or Enterprise Software Advisor for assistance.

Keep this contract in a secure location. It is important that you understand all of the terms and conditions contained within, and can access the information if questions arise.

Thank you,

Microsoft Licensing, GP



Microsoft Business **Agreement**

Microsoft Business Agreement
Number
Microsoft affiliate to complete

U3475507

This Microsoft Business Agreement is entered into between the following entities as of the effective date identified below. Each party will notify the other in writing if any of the information in the following table changes.

Customer			
Name of Entity		Contact Name (This person handles access to online information and receives notices under this agreement unless a different contact is provided below)	
QUINSTREET, INC.		Jeff Daugherty	
Street Address		Contact Email Address (required for online access)	
301 CONSTITUTION DRIVE MENLO PARK, CA 94025		jdaugherty@quinstreet.com	
City	State/Province	Phone	
		650. 475. 7733	
Country	Postal Code	Fax	
		650. 289. 0854	
Microsoft Account Manager Name		Microsoft Account Manager Email Address	
Contracting Microsoft Affiliate			
MSLI, GP - 6100 Neil Road, Suite 210 - Reno, Nevada USA 89511-1137 - Dept. 551, Volume Licensing			

If online access and notices should be provided to someone or some place other than above, complete this section:			
Name of Entity		Contact Name	
Street Address		Contact Email Address (required for online access)	
City	State/Province	Phone	
Country	Postal Code	Fax	


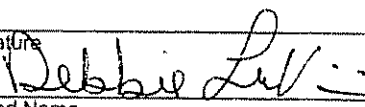
If duplicate electronic contractual notices should be provided to someone or some place in addition to the above, complete this section:		
Name of Entity	Contact Name	
Street address	Contact Email Address (required for electronic notice)	
City	State/Province	Phone
Country	Postal Code	Fax

This agreement contains terms of the relationship between you (the entity signing the agreement and its affiliates) and us (the Microsoft affiliate signing below and its affiliates). If you license software or contract for services from us under this agreement, the specific terms of those transactions will be contained in separate license or services agreements that will incorporate the terms of this agreement, as amended by those license or services agreements. Nothing in this agreement obligates either party to enter into any license or services agreements.

Effective date. If the first license agreement entered into under this agreement is given an effective date that is earlier than the date this agreement is signed by us, the effective date of this agreement will be that earlier date. Otherwise, this agreement will be effective on the date it is signed by us.

Notices to Microsoft should be sent to:	Copies should be sent to:
MSLI, GP 6100 Neil Road, Suite 210 Reno, Nevada USA 89511-1137 Dept. 551, Volume Licensing	Microsoft Law and Corporate Affairs One Microsoft Way Redmond, WA 98052 USA Volume Licensing Group (425) 936-7329 fax

By signing below, you acknowledge that you have read and understood the terms of this agreement, agree to be bound by these terms, and represent and warrant that the information you provide on this cover page is accurate.

Customer	Contracting Microsoft Affiliate
Name QuintStreet, Inc.	MSLI, GP
Signature 	Signature 
Printed Name Jeff Daugherty	Printed Name Debbie LuVisi
Printed Title IT System Administrator	Printed Title Contract Administrator
Signature Date 5/29/03	Signature Date (date Microsoft affiliate countersigns) JUN 13 2003
	Effective Date (may be different than signature date) JUN 12 2003

Terms and Conditions

1. Definitions. In this agreement, "you" means the entity that has entered into this agreement (or a license or services agreement under this agreement) and its affiliates, and "we" or "us" means the Microsoft affiliate that has entered into this agreement (or any license or services agreement under this agreement) and its affiliates. In addition, the following definitions apply:

"affiliate" means (i) with regard to you, any legal entity that you own, which owns you, or which is under common ownership with you, and (ii) with regard to us, any legal entity that we own, which owns us, or which is under common ownership with us;

"available" means, with respect to a product, that we have made licenses for that product available for ordering under a particular licensing program;

"commercial product" means any product we make available for license for a fee;

"fixes" means commercial product service packs and other fixes that we release generally;

"free product" means any product we make available for license without charge;

"ownership" means, for purposes of the definition of "affiliate" above, more than 50% ownership;

"pre-release" or "beta" products are products provided prior to commercial release;

"product" means all commercial, free, pre-release and beta products;

"Product List" means, with respect to any licensing program, the statement published by Microsoft from time to time on the World Wide Web at <http://microsoft.com/licensing/>, or at a successor site that we identify, which identifies the products that are or may be made available under the program (which availability may vary by region) and any product-specific conditions or limitations on the acquisition of licenses for those products;

"run" or "use" means to copy, install, use, access, display, run or otherwise interact with;

"service deliverables" means computer code and related materials, other than fixes, we provide to you when performing services

2. Use and ownership. Unless otherwise specified in a license agreement, use of any product that you license from us is governed by product use rights specific to each product and version and by the terms of the license agreement under which you licensed the product. We will provide you with a copy of the applicable product use rights, or will make them available to you either by publication on the World Wide Web, at <http://microsoft.com/licensing/>, or at a successor site that we identify, or by some other reasonable means. You acknowledge that you have access to the World Wide Web. We do not transfer any ownership rights in any licensed product and we reserve all rights not expressly granted

Use of any fixes is defined by the product use rights for the affected product or, if the fix is not provided for a specific product, any other use terms we provide. All fixes are licensed to you. Use and ownership of service deliverables will be as set forth in the applicable services agreement and related documents

3. **Restrictions on use.** You may not:

- ? Separate the components of a product made up of multiple components by running them on different computers, by upgrading or downgrading them at different times, or by transferring them separately, except as otherwise provided in the product use rights;
- ? Rent, lease, lend or host products or service deliverables, except where we agree by separate agreement;
- ? Reverse engineer, de-compile or disassemble products, fixes or service deliverables, except to the extent expressly permitted by applicable law despite this limitation;
- ? Transfer licenses to, or sublicense, products, fixes or service deliverables to the U S Government

Products licensed under this agreement (including any license or services agreement incorporating these terms) are subject to U S export jurisdiction. You agree to comply with all applicable international and national laws that apply to these products, including the U S Export Administration Regulations, as well as end-user, end-use and destination restrictions issued by U S and other governments. For additional information, see <http://www.microsoft.com/exporting/>

4. **Confidentiality.**

- a. **Confidential information.** Confidential information means information marked or otherwise identified in writing by a party as proprietary or confidential or that, under the circumstances surrounding the disclosure, ought in good faith to be treated as proprietary or confidential. It includes non-public information regarding either party's products, features, marketing and promotions, and the negotiated terms of our agreements. All beta products are confidential unless excepted below.

Confidential information does not include information which: (i) the recipient developed independently; (ii) the recipient knew before receiving it under the relevant agreement; or (iii) is or subsequently becomes publicly available or is received from another source, in both cases other than by a breach of an obligation of confidentiality.

- b. **Use of confidential information.** For a period of five years after initial disclosure, neither party will use the other's confidential information without the other's written consent except in furtherance of this business relationship or as expressly permitted by this section 4, or disclose the other's confidential information except (i) to obtain advice from legal or financial consultants, or (ii) if compelled by law, in which case the party compelled to make the disclosure will use its best efforts to give the other party notice of the requirement so that the disclosure can be contested.

You and we will take reasonable precautions to safeguard each other's confidential information. Such precautions will be at least as great as those we each take to protect our own confidential information. You and we will disclose each other's confidential information to our employees or consultants only on a need-to-know basis and subject to the confidentiality obligations imposed here. When confidential information is no longer necessary to perform any obligation under any of the agreements, each of us will return it to the other or destroy it at the other's request.

- c. **Retained rights.** You and we are free to develop products independently without the use of the other's confidential information. Neither you nor we are obligated to restrict the future work assignments of people who have had access to confidential information. In addition, you, we and these people are free to use the information that these people remember related to information technology, including ideas, concepts, know-how or techniques, so long as confidential information of the other party is not disclosed in violation of this agreement in the course of such use. This use shall not grant either party any rights under the other's copyrights or patents and does not require payment of royalties or separate license.

We or you may provide suggestions, comments or other feedback to the other with respect to the other's confidential information. We or you will not give feedback that is subject to license terms that seek to require of the party receiving the feedback that any product, technology, service or documentation incorporating or derived from such feedback, or any intellectual property, must be licensed or otherwise shared with any third party. Feedback is voluntary and the party receiving feedback is not required to hold it in confidence. The party receiving feedback will not disclose the source of feedback without the consent of the party providing it. Feedback may be used for any purpose without obligation of any kind.

- d. **Cooperation in the event of disclosure.** Each of us will immediately notify the other upon discovery of any unauthorized use or disclosure of confidential information and will cooperate in any reasonable way to help the other regain possession of the confidential information and prevent further unauthorized use or disclosure.

5. Warranties.

- a. **Limited product warranty.** We warrant that each version of a commercial product will perform substantially in accordance with our user documentation. This warranty is valid for a period of one year from the date you first run a copy of the version. To the maximum extent permitted by law, any warranties imposed by law concerning the products are limited to the same extent and the same one-year period. This warranty does not apply to components of products which you are permitted to redistribute under applicable product use rights, or if failure of the product has resulted from accident, abuse or misapplication. If you notify us within the warranty period that a product does not meet this warranty, then we will, at our option, either (i) return the price paid for the product or (ii) repair or replace the product. To the maximum extent permitted by law, this is your exclusive remedy for any failure of any commercial product to function as described in this sub-section.
- b. **Free and beta products.** To the maximum extent permitted by law, free and beta products are provided "as-is," without any warranties. You acknowledge that the provisions of this paragraph with regard to pre-release and beta products are reasonable having regard to, among other things, the fact that they are provided prior to commercial release so as to give you the opportunity (earlier than you would otherwise have) to assess their suitability for your business, and without full and complete testing by us.
- c. **Services.** We warrant that all services will be performed in a good workmanlike manner.
- d. **NO OTHER WARRANTIES.** TO THE EXTENT PERMITTED BY APPLICABLE LAW, WE DISCLAIM AND EXCLUDE ALL REPRESENTATIONS, WARRANTIES AND CONDITIONS, WHETHER EXPRESS, IMPLIED OR STATUTORY, OTHER THAN THOSE IDENTIFIED EXPRESSLY IN THIS AGREEMENT (INCLUDING ANY LICENSE OR SERVICES AGREEMENT THAT INCORPORATES THESE TERMS), INCLUDING BUT NOT LIMITED TO WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, SATISFACTORY QUALITY, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCTS, SERVICE DELIVERABLES, RELATED MATERIALS AND SERVICES. WE WILL NOT BE LIABLE FOR ANY SERVICES OR PRODUCTS PROVIDED BY THIRD PARTY VENDORS, DEVELOPERS OR CONSULTANTS IDENTIFIED OR REFERRED TO YOU BY US UNLESS SUCH THIRD PARTY PRODUCTS OR SERVICES ARE PROVIDED UNDER WRITTEN AGREEMENT BETWEEN YOU AND US, AND THEN ONLY TO THE EXTENT EXPRESSLY PROVIDED IN SUCH AGREEMENT.

6. Defense of infringement and misappropriation claims. We will defend you against any of the following claims made by an unaffiliated third party, and will pay the amount of any resulting adverse final judgment (or settlement to which we consent):

- a. claims that any commercial product or fix infringes its patent, copyright or trademark or misappropriates its trade secret, or
- b. claims that any service deliverable infringes its copyright or trademark, or misappropriates its trade secret.

You must notify us promptly in writing of the claim and give us sole control over its defense or settlement. You agree to provide us with reasonable assistance in defending the claim, and we will reimburse you for reasonable out of pocket expenses that you incur in providing that assistance. The terms "misappropriation" and "trade secret" are used as defined in the Uniform Trade Secrets Act, except in the case of claims arising under any license or service agreement governed by the laws of any jurisdiction outside the United States, in which "misappropriation" will mean intentionally unlawful use and "trade secret" will mean "undisclosed information" as specified in Article 39.2 of the TRIPs agreement.

Our obligations will not apply to the extent that the claim or adverse final judgment is based on (i) specifications you provide to us for the service deliverables; (ii) code or materials provided by you as part of service deliverables; (iii) your running of the product, fix or service deliverables after we notify you to discontinue running due to such a claim; (iv) your combining the product, fix or service deliverables with a non-Microsoft product, data or business process; (v) damages attributable to the value of the use of a non-Microsoft product, data or business process; (vi) your altering the product, fix or service deliverables; (vii) your distribution of the product, fix or services deliverable to, or its use for the benefit of, any third party; (viii) your use of our trademark(s) without express written consent to do so; or (ix) for any trade secret claim, your acquiring a trade secret (a) through improper means; (b) under circumstances giving rise to a duty to maintain its secrecy or limit its use; or (c) from a person (other than us or our affiliates) who owed to the party asserting the claim a duty to maintain the secrecy or limit the use of the trade secret. You will reimburse us for any costs or damages that result from these actions.

If we receive information concerning an infringement claim related to a commercial product, fix or service deliverable, we may, at our expense and without obligation to do so, either (i) procure for you the right to continue to run the allegedly infringing product, fix or service deliverable, or (ii) modify the product, fix or service deliverable or replace it with a functional equivalent, to make it non-infringing, in which case you will stop running the allegedly infringing product, fix or service deliverable immediately. If, as a result of an infringement claim, your use of a commercial product, fix or service deliverable is enjoined by a court of competent jurisdiction, we will, at our option, either procure the right to continue its use, replace it with a functional equivalent, modify it to make it non-infringing, or refund the amount paid and terminate the license for and, as applicable to certain service deliverables, your ownership rights in, the infringing product, fix or service deliverable.

If any other type of third party claim is brought against you regarding our intellectual property, you must notify us promptly in writing. We may, at our option, choose to treat these claims as being covered by this section. This Section 6 provides your exclusive remedy for third party infringement and trade secret misappropriation claims.

7. Limitation of liability.

- a. Limitation.** There may be situations in which you have a right to claim damages or payment from us. Except as otherwise specifically provided in this paragraph, whatever the legal basis for your claims, our liability will be limited, to the maximum extent permitted by applicable law, to direct damages up to the amount you have paid for the product or services giving rise to the claims. In the case of free product, services provided to you free of charge, or code you are authorized to redistribute to third parties without separate payment to Microsoft, our total liability to you will not exceed US\$5000, or its equivalent in local currency. The limitations contained in this paragraph will not apply with respect to the following in connection with the performance of this agreement (or any license or services agreement incorporating these terms):

(i) our obligations under Section 6 to defend third party claims of patent, copyright or trademark infringement or trade secret misappropriation, and to pay damages resulting from any final adjudication (or settlement to which we consent) of such claims;

(ii) our liability for damages for gross negligence or willful misconduct, to the extent caused by us or our agent and awarded by a court of final adjudication; and

(iii) our obligations under Section 4 (confidentiality)

- b. NO LIABILITY FOR CERTAIN DAMAGES.** TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEITHER PARTY NOR ANY OF ITS AFFILIATES OR SUPPLIERS WILL BE LIABLE FOR ANY INDIRECT DAMAGES (INCLUDING, WITHOUT LIMITATION, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES, DAMAGES FOR LOSS OF PROFITS OR REVENUES, BUSINESS INTERRUPTION, OR LOSS OF BUSINESS INFORMATION) ARISING IN CONNECTION WITH ANY AGREEMENT, PRODUCT, FIX OR SERVICE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR IF SUCH POSSIBILITY WAS REASONABLY FORESEEABLE. THIS EXCLUSION OF LIABILITY DOES NOT APPLY TO EITHER PARTY'S LIABILITY TO THE OTHER FOR VIOLATION OF ITS CONFIDENTIALITY OBLIGATION OR OF THE OTHER PARTY'S INTELLECTUAL PROPERTY RIGHTS.

- c. **Application.** Except as specified expressly in this Section 7, the limitations on and exclusions of liability for damages in this agreement (including any license or services agreement incorporating these terms) apply regardless of whether the liability is based on breach of contract, tort (including negligence), strict liability, breach of warranties, or any other legal theory.

8. **Verifying compliance.** You must keep records relating to the products you and any affiliate participating under a license agreement run. We have the right to verify compliance with any license agreement, at our expense, during the term of the license agreement and any enrollment and for a period of one year thereafter. To do so, we will engage an independent accountant from a nationally recognized public accounting firm, which will be subject to a confidentiality obligation. Verification will take place upon not fewer than 30 days notice, during normal business hours and in a manner that does not interfere unreasonably with your operations. As an alternative, we may require you to accurately complete our self-audit questionnaire relating to the products you and any affiliates participating under a license agreement use. If verification or self-audit reveals unlicensed use of products, you must promptly order sufficient licenses to permit all product usage disclosed. If material unlicensed use is found (license shortage of 5% or more), you must reimburse us for the costs we have incurred in verification and acquire the necessary additional licenses as single retail licenses within 30 days. If we undertake such verification and do not find material unlicensed use of products, we will not undertake another verification of the same entity for at least one year. We and our auditors will use the information obtained in compliance verification only to enforce our rights and to determine whether you are in compliance with the terms of the applicable license agreement. By invoking the rights and procedures described above, we do not waive our rights to enforce this agreement (including any license or services agreement incorporating these terms) or to protect our intellectual property by any other means permitted by law.

9. **Term and Termination.** This agreement will remain in effect until terminated. Either party to this agreement may terminate it at any time by giving at least 60 days written notice. To the extent necessary to implement the termination provisions of this agreement, each of the parties waives any right it has, or obligation that the other party may have, now or in the future under any applicable law or regulation, to request or obtain the approval, order, decision or judgment of any court to terminate this agreement. The sole effect of terminating this agreement will be to terminate the ability of either party to enter into subsequent license agreements or services agreements under this agreement. Termination of this agreement will not, by itself, result in the termination of any license or services agreements previously entered into under this agreement, and any terms of this agreement incorporated by reference into such a license or services agreement will continue in effect unless and until that license or services agreement itself is terminated or expires.

10. **Miscellaneous.**

- a. **Notices.** All notices, authorizations, and requests given or made in connection with a license or services agreement must be sent by post, express courier, facsimile, or email to the addresses and numbers indicated in the applicable license or services agreement. Any notice of termination of this agreement must be sent by post, express, courier, facsimile or email to the addresses and numbers indicated in the cover page to this agreement. Notices will be deemed delivered on the date shown on the postal return receipt or on the courier, facsimile or email confirmation of delivery.
- b. **Assignment.** This agreement and any license agreement may be assigned by either party only to an affiliate, but assignment will not relieve the assigning party of its obligations under the assigned agreement. If either party assigns this agreement or any license agreement, it must notify the other party of the assignment in writing. Neither party may assign any services agreement without the written consent of the other.
- c. **Severability.** If a court holds any provision of this agreement (including any license or services agreement incorporating these terms) to be illegal, invalid or unenforceable, the remaining provisions will remain in full force and effect and the parties will amend the agreement to give effect to the stricken clause to the maximum extent possible.
- d. **Waiver.** No waiver of any breach of this agreement (including any license or services agreement incorporating these terms) shall be a waiver of any other breach, and no waiver shall be effective unless made in writing and signed by an authorized representative of the waiving party.

- e. **Force Majeure.** To the extent that either party's performance is prevented or delayed, either totally or in part, for reasons beyond that party's control, then that party will not be liable, so long as it resumes performance as soon as practicable after the reason preventing or delaying performance no longer exists.
- f. **Dispute resolution.** If we bring an action to enforce this agreement (including any license or services agreement incorporating these terms), we will bring it in the jurisdiction where your contracting affiliate has its headquarters. If you bring an action to enforce any such license agreement entered into with any affiliate of ours located outside of Europe, you will bring it in the State of Washington. If you bring an action to enforce any such license agreement entered into with any affiliate of ours located in Europe, you will bring it in Ireland. If you bring an action to enforce any such services agreement, you will bring it in the jurisdiction where our affiliate delivering the services has its headquarters. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.
- g. **Survival.** Provisions regarding product use rights, restrictions on use, evidence of perpetual licenses, transfer of licenses, warranties, limitations of liability, confidentiality, compliance verification and obligations on termination or expiration will survive termination or expiration of this agreement and of any license or services agreement in which they are incorporated.
- h. **Non-exclusivity.** This agreement (including any license or services agreement incorporating these terms) is non-exclusive. Nothing contained in it requires you to license, use or promote Microsoft software or services exclusively. You may, if you choose, enter into agreements with other parties to license, use or promote non-Microsoft software or services.
- i. **Applicable law.** The terms of any license agreement entered into with any affiliate of ours located outside of Europe will be governed by and construed in accordance with the laws of the State of Washington and federal laws of the United States. The terms of any license agreement entered into with any affiliate of ours located in Europe will be governed by and construed in accordance with the laws of Ireland. The terms of any services agreement will be governed by the laws of the jurisdiction where our affiliate delivering the services is organized. The 1980 United Nations Convention on Contracts for the International Sale of Goods and its related instruments will not apply to this agreement or any license or service agreement entered into with any affiliate of ours under this agreement.

In any case where the law of any of the jurisdictions cited below applies, the following country-specific provisions will replace or supplement the equivalent provisions above:

Australia

Replace Section 2, Use and ownership, first sentence of the first paragraph, with the following:

Unless otherwise specified in a license agreement, use of any product that you license from us is governed by product use rights specific to each product and version and by the terms of the license agreement under which you licensed the product *and these are the only rights that you have to run any product*

Supplement Terms and Conditions, Section 5, Warranties, with the following:

- f. Consumer Remedies. Notwithstanding anything in this agreement, consumers may have the benefit of certain rights or remedies pursuant to the Trade Practices Act 1974 (Cth) and similar state and territory laws in Australia in respect of which liability may not be excluded. If so, then to the maximum extent permitted by law, such liability is limited, at our option, in the case of goods to either (i) replacement of the goods or (ii) correction of defects in the goods, and in the case of services to either (i) resupply of the services or (ii) the cost of the resupply of the services.*

Supplement Terms and Conditions, subsection 10, Miscellaneous, with the following:

- j. GST. If any GST is payable on any supplies made under a license or services agreement entered into by you or your affiliates under this agreement, an amount on account of this GST will also be payable by you as invoiced to you*

Brazil

Replace Terms and Conditions, subsection 5(c), Services, with the following:

- c. Services. We warrant that all services will be performed using generally accepted industry standards and practices. We will use commercially reasonable efforts in providing product support services. This warranty is valid for a period of 90 days from the date of the respective work order or service description. If you notify us within the warranty period that a service does not meet this warranty and we are not able to re-perform it accordingly to this warranty within the term established by law, currently 30 days, then we will, at your option, either (i) return the price paid for the service; (ii) re-perform the service, if feasible; (iii) offer you a discount in an amount equivalent to partial non-performance of the service, if applicable. This is your exclusive remedy for any failure of any service deliverables to function as described in this paragraph.*

Canada

For services agreements governed under the laws of Canada, replace Terms and Conditions, subsection 10(i), Applicable law, with the following:

- i. Applicable law. The terms of any license agreement entered into with any affiliate of ours located outside of Europe will be governed by and construed in accordance with the laws of the State of Washington and federal laws of the United States. The terms of any license agreement entered into with any affiliate of ours located in Europe will be governed by and construed in accordance with the laws of Ireland. The terms of*

any services agreement will be governed by the laws of the *Province of Ontario and the federal laws of Canada applicable therein*. The 1980 United Nations Convention on Contracts for the International Sale of Goods and its related instruments will not apply to this agreement or any agreement entered into with any affiliate of ours under this agreement.

Supplement Terms and Conditions, Section 10, Miscellaneous, with the following:

- j. **Language.** It is the express wish of the parties that this agreement and/or any related documents have been drawn up in a language other than French. French translation: Il est de la volonté expresse des parties que le présent contrat et/ou tous les documents qui s'y rattachent soient rédigés dans une langue autre que le français

Germany

Replace Terms and Conditions, Section 5, Warranties, with the following:

5. **Agreed Characteristics; Claims due to Defects in Quality and Defects in Title.** To the extent that we should be required to supply a yet to be produced movable thing (herzustellende, bewegliche Sache) or to the extent our Services are, exceptionally, considered work performances (Werkleistungen), the following provisions will apply to claims due to defects in quality or defects in title (collectively referred to as "Defects") but will not apply where the claims are for damages or reimbursement of expenses

The provisions contained in Section 7 shall apply to claims for damages or expenses resulting from Defects

- a. Your rights and their expiry will be exclusively determined in accordance with applicable statutory law in the event of malicious non-disclosure of a Defect (arglistiges Verschweigen) or in the event of a guarantee relating to characteristics of a supplied, yet to be produced, movable thing (gelieferte, herzustellende, bewegliche Sache) or relating to work performances (Beschaffenheitsgarantie) (§§ 651, 444 and 639 of the German Civil Code (BGB))
- b. We give you express notice that, based on the current state of technology, it is not possible to develop complex software products that are completely free of technical defects. The contractually-specified characteristics (vertragliche Beschaffenheit) for the software to be provided by us does not require that the software be completely free of programming errors but merely that the software be free of programming errors that materially impair its use
- c. Our obligations will not apply to the extent that a claim is based on (i) specifications, code, or materials you provided; (ii) use of, or access to, service deliverables by any person or entity other than you or your Affiliates as permitted by the applicable statement of services; (iii) your use of service deliverables after we notify you to discontinue their use due to such a claim; (iv) your combining service deliverables with non-Microsoft products, data or business processes
- d. To the extent we are required to supply a yet to be produced movable thing, you may only make a claim against us if you have properly complied with your obligation to notify us of all Defects in accordance with § 377 of the German Commercial Code (HGB). You must provide us with written notification of any apparent Defect found by you during your examination according to § 377 of the German Commercial Code immediately, but no later than within two weeks after delivery. You must notify us in writing of any hidden Defects immediately after discovery
- e. We will rectify Defects of which you have given us notice prior to the expiry of the limitation period stipulated in this section. To the extent you have made a claim against us for subsequent performance (Nacherfüllung) we will have the right, in our sole discretion, to either rectify the Defect, or to supply a new movable thing, or, if the defect is in a work performance, to create a new work free of Defects. You agree to cooperate in our subsequent performance by providing any required information and documentation and to provide all reasonable assistance

- f. You may be entitled to rescind the respective services agreement – to the extent rescission is not excluded by statutory law - or to reduce payment only after an appropriate deadline set by you for subsequent performance of at least three weeks has expired, unless that deadline is not required by statutory law.
- g. In the event we prove that there was no Defect for which we were responsible based on this section, we will be entitled to require reimbursement of the expenses, based on our standard rates, incurred for our efforts to carry out subsequent performance.
- h. You may not make a claim under this section if you or a third party have altered the supplied, yet to be produced moveable thing or the work performance without our consent, unless you are able to prove that the Defects in question were not caused by that alteration.
- i. All claims to which you are entitled pursuant to this Section 5 will expire within one year. For a supplied, yet to be produced, movable thing, the limitation period will start on the delivery date; in cases of work performances, the limitation period will start on the date of acceptance (Abnahme).

The foregoing shall not affect the provision contained in § 438, paragraph 1 Nr. 1 a) of the German Civil Code.

Replace Terms and Conditions, Section 7, Limitation of liability, with the following:

7. Limitation of liability.

There may be situations in which you have a right to claim damages or reimbursement of futile (Ersatz vergeblicher Aufwendungen) expenses from us. Whatever the legal basis for your claim (breach of contract, Defects, tort or otherwise), our liability for any and all resultant damages will be limited as follows:

- a. In cases of intentional acts, claims under the German Product Liability Act, malicious non-disclosure of a Defect, or a guarantee in respect of characteristics of a yet to be produced, supplied, movable thing or a work performance (Beschaffenheitsgarantie) (§§ 651, 444 and 639 of the German Civil Code (BGB)) as well as claims based on damage to life, body or health, our liability will be determined exclusively in accordance with statutory law.
- b. **Gross negligence.** In cases of gross negligence, our liability will be limited to typical foreseeable damages. This limitation does not apply to the extent damages have been caused by our managing employees or legal representatives.
- c. **Slight negligence.** In cases of slight negligence we will only be liable in case of a breach of material contractual obligation. In such cases, our liability will be limited to typical, foreseeable damages. In all other cases of slight negligence our liability is excluded.
- d. **Liability without fault (verschuldensunabhängige Haftung).** In cases of liability without fault for an inability to perform during delayed performance, our liability will also be limited to typical foreseeable damages.
- e. In cases where we are required to supply a yet to be produced movable thing, any claim for damages or expenses due to Defects is conditional upon your compliance with your obligations described in Section 5(d) above to notify us of all Defects.
- f. Any claim for damages or expenses resulting from Defects will expire within one year. For a supplied, yet to be produced, movable thing, the limitation period will start on the delivery date; in cases of work performances, the limitation period will start on the date of acceptance (Abnahme). This provision does not affect § 438, paragraph 1 Nr. 1 a) of the German Civil Code.

Any other claims against us for damages or expenses will expire within two years from the date the cause of action arises.

The provision contained in this subsection 7(f) shall not apply to the cases governed by subsection 7(a) above or in case of grossly negligent behavior on our part. In such cases statutory law shall apply.

Indonesia

Replace Terms and Conditions, subsection 10(f), Dispute resolution, with the following:

- f. **Dispute resolution.** Any dispute arising out of or in connection with this agreement, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration in Singapore in accordance with the Arbitration Rules of the Singapore International Arbitration Centre, which rules are deemed to be incorporated by reference into this clause. The Tribunal shall consist of one arbitrator to be appointed by the Chairman of SIAC. The language of the arbitration shall be English. The decision of the arbitrator shall be final, binding and incontestable and may be used as a basis for judgment thereon in Indonesia or elsewhere. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction

Latin America, including countries in South and Central America and the Caribbean (except Brazil and territories of France, Netherlands, U.K. and U.S.)

Supplement Terms and Conditions, Section 10, Miscellaneous, with the following:

- j. **Stamp tax.** We will not be responsible for any stamp taxes that might be owed pursuant to this agreement or to any license or service agreement entered by you and/or your affiliates. Upon our request, you and your affiliates will provide to us evidence of payment of the appropriate stamp taxes to the appropriate authorities

Malaysia

Supplement Terms and Conditions, Section 5, Warranties, with the following:

- e. **Consumer Remedies.** Notwithstanding anything in this agreement, consumers may have the benefit of certain rights or remedies pursuant to the Consumer Protection Act in Malaysia in respect of which liability cannot be excluded or restricted. If permitted by law and to the maximum extent permitted by law, such liability is limited, at our option, in the case of goods to either (i) replacement of the goods or (ii) correction of defects in the goods, and in the case of services to either (i) re-supply of the services or (ii) the cost of the re-supply of the services

New Zealand

Supplement Terms and Conditions, subsection 10, Miscellaneous, with the following:

- j. **Statutory liability.**
- (i) **Business.** Where we are a supplier (as that term is defined in the Consumer Guarantees Act 1993 ("CGA")) of the products or other goods or services, you confirm that the products or other goods or services provided by us under a license or services agreement are acquired for the purposes of a business (as that term is defined in the CGA) and you agree that the CGA does not apply to the products or other goods or services supplied by us.
 - (ii) **Consumers.** Subject to subsection (i) above, nothing in this agreement is otherwise intended to limit the rights of a "consumer" under the CGA where that Act applies, and the terms of this agreement are to be modified to the extent necessary to give effect to this intention.

- (iii) **On-Supply** If you on-supply to any person you must include the following clause in the terms of all agreements for the on-supply of products: "Where you are acquiring products or services for the purposes of a business, you acknowledge and agree that Microsoft Corporation and its affiliates have no liability or obligation to you under the Consumer Guarantees Act 1993 and where you on-supply the products or services you must include all of this clause in the terms of that on-supply"
- (iv) **Failure to Comply** You must indemnify and keep us and our affiliates indemnified and hold us and our affiliates free and harmless from any costs, expenses, loss or damages incurred by us or our affiliates as a result of you or any purchaser or acquirer from you failing to comply with the obligations contained in this section.

PRC

Replace Terms and Conditions, subsection 10(f), Dispute resolution, with the following:

- f. **Dispute resolution.** If we bring an action to enforce a license or a services agreement, we will bring it in the jurisdiction where your contracting affiliate has its headquarters. If in this case your contracting affiliate has its headquarters in the PRC, any action by us to enforce a license or a services agreement will be submitted to binding arbitration at the China International Economic and Trade Arbitration Commission in Beijing (CIETAC) in accordance with its rules in effect from time to time. If you bring an action to enforce a license agreement entered into with any affiliate of ours located outside of Europe, you will bring it in the courts of the State of Washington. If you bring an action to enforce a license agreement entered into with any affiliate of ours located in Europe, you will bring it in Ireland. If you bring an action to enforce a services agreement, you will bring it in the jurisdiction where our affiliate delivering the services has its headquarters. If in this case our affiliate delivering services has its headquarters in the PRC, any action by you to enforce a services agreement will be submitted to binding arbitration at CIETAC in accordance with its rules in effect from time to time. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.

England and Wales

Replace Terms and Conditions, subsection 7(b), No liability for certain damages, with the following:

- b. **No liability for certain damages.** To the maximum extent permitted by applicable law, neither party nor any of its affiliates or suppliers will be liable for any consequential or special damage, loss of profit or revenue or any indirect damages (including, without limitation business interruption, or loss of business information) arising in connection with any agreement, product or service, even if advised of the possibility of such damages or if such possibility was reasonably foreseeable. This exclusion of liability does not apply to either party's liability to the other for violation of its confidentiality obligation or of the other party's intellectual property rights.

Supplement Terms and Conditions, section 7, Limitation of liability, with the following:

- d. **Liability for death or personal injury.** Nothing in this agreement shall exclude liability for death or personal injury caused by negligence or liability for fraudulent misrepresentation.

Vietnam

Supplement Terms and Conditions, section 9, Termination, with the following:

Without any liability to you, we reserve the right to either terminate or vary this agreement or any license agreement or services agreement, if we are required to use a statutory form. If we choose to terminate any such agreement for this reason, all your rights granted under it will terminate.

Replace Terms and Conditions, subsection 10(f), Dispute Resolution, with the following:

- f. **Dispute Resolution.** All disputes, claims or proceedings between the parties relating to the validity, construction or performance of this agreement shall be settled by arbitration in accordance with UNCITRAL Arbitration Rules as at present in force. The appointing authority shall be the International Chamber of Commerce ("ICC") acting in accordance with the rules adopted by the ICC for this purpose and the place of arbitration will be the State of Washington, U.S.A. There shall only be one arbitrator. The award shall be final and binding on the parties. The parties hereto irrevocably agree to submit all matters and disputes arising in connection with this agreement to arbitration in Washington. This choice of jurisdiction does not prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights or confidentiality obligations in any appropriate jurisdiction.